

SD Times

SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers



MAY 1, 2008 • ISSUE NO. 197

www.sdtimes.com • \$9.95

GOOGLE REVS APP ENGINE AS FREE SERVICE

BY ROBERT MULLINS
AND DAVID WORTHINGTON

In another bid to expand beyond its presence in search engine advertising, Google is launching a free Web application-hosting service.

Google App Engine will allow software application developers to host their applications on Google's infrastructure and to scale resources as needed. The company made the preview release at last month's CampFire One developer event.

The release is currently limited to the first 10,000 developers who sign up, and they will be restricted to using 500MB of storage. CPU and network bandwidth would be sufficient to support about 5 million page views per month for a typical

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Yahoo defies Microsoft, seeks alternative bids

Ballmer letter threatens to oust Yahoo's board

BY DAVID WORTHINGTON

In a sharply worded letter to Yahoo's board, Microsoft CEO Steve Ballmer last month threw down the gauntlet and threatened a hostile takeover. He explicitly warned against letting a three-week window for a friendly transaction to close.

But Yahoo, playing a classic defensive strategy, may force Microsoft to open its wallet by striking deals with other Internet players.

In the April 5 letter, Ballmer bemoaned the pace of negotiations since Microsoft made its US\$44.6 billion proposal to acquire Yahoo at the end of January. Yahoo's management, led by CEO Jerry Yang, has urged share-

holders to reject the proposal, and Yahoo's board formally declined the offer on Feb. 11, saying that it undervalued the company.

Meanwhile, Ballmer's chief complaints are the "limited interaction" between the management of the companies since the offer and the lack of substantive progress toward a deal.

"Now is the time for our respective companies to authorize teams to sit down and negotiate a definitive agreement on a combination of our companies," Ballmer wrote. He set a three-week deadline for that to happen and threatened to initiate a proxy contest to elect an "alternative slate of directors for the Yahoo board" if it did not

come to the table.

It is in Microsoft's best interest to wrap up the deal quickly, said Directions on Microsoft analyst Greg DeMichillie. The longer it takes to conclude, he said, the more Yahoo's best and brightest engineers will leave the company, adding that a friendly deal would allow Microsoft to more easily identify the elite among those who remain.

Yahoo's board struck back at Ballmer's claims in a letter dated April 8. The board accused Ballmer of mischaracterizing the nature of its discussions with Microsoft and noted that the companies have had "constructive conversations" about integration and regulatory issues.

The letter asserted that Microsoft has failed to supply Yahoo with information it requested on March 28 about anti-trust and regulatory issues associated with the transaction.

As for Ballmer's letter, it reiterated Microsoft's position that it is offering "a premium" for Yahoo, one that is even more significant now, citing "public indicators" that suggest Yahoo's share of the Internet search market and overall page views have fallen since January.

In reality, Yahoo appears to be holding its own, not sinking. A March 26 market share report by Nielsen/NetRatings gave Yahoo a 17.6% share of the U.S. search

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Salesforce-Google deal buoys SaaS

Photo: Dan Farber



Salesforce chairman and CEO Marc Benioff, left, with Google CEO Eric Schmidt.

BY ROBERT MULLINS

In a deal that boosts the software-as-a-service model, Salesforce.com will gain access to Google Apps.

Salesforce for Google Apps, as it's being called, will offer Google's multiple office productivity applications integrated with Salesforce's customer relationship management and other applica-

tions, Salesforce said in a news release. Business customers can access those combined applications using the Internet without any hardware or software to download, install or maintain.

The partnership extends previous collaborations between the two companies, said Google CEO Eric Schmidt, in a prepared statement: "Together, we are making more applications and services available online so

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Multicore processors don't work as well as they could if the related software is written for a single-processor world. The Multicore Association is releasing an API for writing multicore embedded applications, while universities are developing curricula to teach multicore programming to the next generation of developers.

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Hacker overcame PCI standard in security breach

Retailer was certified, but it didn't stop theft of card data

BY JENNIFER DEJONG

It's the same old story: Retailer gets hacked, thief gets away with the credit card data. But the latest security breach to make headlines adds a twist. The merchant that got hit was certified compliant with PCI DSS, the Payment Card Industry Data Security Standard designed to ward off such attacks.

"They were compliant and they got hit anyway," Cenzie vice president of marketing Mandeep Khera said, referring to the Hannaford Bros. supermarket chain of New England, which reported in March the theft of 4.2 million individual customer credit or debit card numbers. "PCI is a little bit of a sham. It gives [businesses] a certificate, which may or may not protect you," the consumer.

SD Times asked application security toolmakers and other experts whether PCI DSS itself is under attack, in the wake of the breach of a certified retailer. Their response: The standard needs to be more specific when spelling out best practices for securing credit card data. Such guidelines as "Review custom application code to identify coding vulnerabilities" are so broadly stated they are subject to interpretation, they asserted.

But the experts also said that although it's important for the standard to keep evolving, pointing to the Hannaford breach as a failure of PCI is too simplistic.

"Security is not a static thing," said Gary McGraw, chief technology officer for security consultancy Cigital. "You get certified at a certain point in time, but your posture has to [continually] change according to what is going on in the threat space." That means a retailer can be "compliant on Monday, and in violation on Tuesday," added Tom Mahoney, director of Merchant911.org, a

Web site that publishes information meant to help online merchants prevent credit card fraud.

If anything, the breach of a PCI-certified retailer helps application security providers and consultants bolster their own message that hasn't taken hold as rapidly as they would like: Writing, deploying, and maintaining secure applications demands a continuing effort that begins at the outset of the development process. That is an infinitely more complex undertaking than simple compliance with PCI DSS is, they admit.

"PCI was not intended as the sole measure to ensure security," explained Jack Danahy, chief technology officer for application security toolmaker Ounce Labs. "Hannaford's [embarrassment] helps organizations become more sensitized about this issue."

HP security consultant Joey Peloquin said that PCI DSS is "a brilliant first attempt that a majority of merchants can adhere to. But what do they mean by 'review code'?" he wondered. "They don't say, 'Hire a consultant to review code by hand. They don't say, 'Run [an application security tool] to do that.'"

It's a good step forward but it's vague, added Cenzie's Khera. "PCI DSS is so high-level there is not much clarity."

Cenzie sells application security tools; HP acquired its own line by purchasing SPI Dynamics last year.

Glenn Boyet, director of marketing and communications for the PCI Security Standards Council, which manages PCI DSS, said an update to the current, version 1.1 is expected in September. Further details were not made available. The council is composed of payment card issuers American Express, Discover Financial Services,

MasterCard WorldWide, Visa International and others. Payment card issuers can fine merchants that fail to comply with the standard. Compliance is measured by Qualified Security Assessors, specified by the council.

SPIRIT OF PCI

The best way to interpret the standard—and thus ensure better protection of credit card data—is to follow the basic principles, rather than satisfy vague criteria, said Cigital's McGraw. "The spirit of the law says a company is committed to protecting customers' personal information. The letter of the law is a piece of paper that says you are compliant."

But many retailers subject to PCI DSS focus only on the outward signs of compliance, said

Cenzie's Khera. "If you ask them if they are worried about securing their Web applications completely, they say: 'No, we don't care about that right now. We are PCI DSS-compliant, so we won't be penalized by Visa and MasterCard.'"

Although what's PCI compliant and what's not is, like any mandate, subject to interpretation, most of the Qualified Security Assessors that conduct audits for the council do a good job, said Roger Thornton, chief technology officer and co-founder of application security tool maker Fortify. "They are relatively rigorous, relatively fair and relatively consistent," he said. McGraw didn't disagree, but he noted, "There is no accreditation board for the people doing the certifying. One firm says, 'Fine.' Another

says 'Fix the following 18 things.'"

Still, PCC DSS specifies best practices for access control, encryption, network security and secure coding, making it "far and away the most comprehensive security standard," Thornton said. It's important to view it for what it is: a regulatory standard that offers guidance. "PCI has done a good job of that."

Obviously, PCI cannot demand too much of merchants too fast, added Ounce Labs' Danahy. "This has to be an incremental approach to be successful. Version 1.0 raised awareness; 1.1 added practices to ensure secure coding. We expect [requirements] to be increased gradually. Doing it all at once would be insurmountable for retailers." ■

WHAT WENT WRONG AT HANNAFORD?

The supermarket chain that recently reported the theft of 4.2 million credit and debit card numbers isn't talking about how it happened, and the company did not respond to a request for an interview. But Brian Chess, chief scientist for application security tool provider Fortify, has a theory about what happened—and an explanation of how Hannaford Bros. could have met PCI requirements. Here's what he told SD Times:



Brian Chess

“The uniformity of the breach—the servers in almost all of the stores were compromised—makes it more likely that the attackers found a vulnerability in a piece of code that was common to all of the servers. If that's the case, it doesn't matter if there were 271 or thousands of servers, because the

attackers could automate their exploit. My guess is that they first broke into the internal corporate network, then did some basic network scanning to identify all of the target servers, then figured out that ... all of the machines [were vulnerable].

There are a few reasons I think it's likely that the attack came from inside the corporate network. First, many organizations are much more lax about internal systems. Second, Hannaford had passed a PCI audit, but PCI takes a relaxed

attitude toward internal machines. Take a look at PCI DSS section 6.6 [the section of the standard that addresses application security]:

Ensure that all Web-facing applications are protected against known attacks by applying either of the following methods:

- Having all custom application code reviewed for common vulnerabilities by an organization that specializes in application security.
- Installing an application layer firewall in front of Web-facing applications.

That means Hannaford fulfilled [the] PCI DSS section 6.6 requirement by default, because its Web applications were for use only inside the corporate network. PCI DSS is a lot like a fire code or a health code. It doesn't guarantee smooth sailing; it just helps people avoid repeating a lot of painful mistakes from the past. I will not be surprised if future versions of PCI DSS drop the distinction between Web-facing software and internal software.”

—Jennifer deJong

Microsoft calls for HTML 5 carve-up

Many working groups are better than one, the company says

BY DAVID WORTHINGTON

The ever-increasing intricacy of the World Wide Web is evidenced by the character and scope of the HTML 5 draft specification. Microsoft wants to hasten HTML 5's arrival, but its proposed solution may not sit well with all parties.

In a recent interview, Internet Explorer platform architect Chris Wilson told SD Times that more progress could be made with teams working in parallel, and he recommended that portions of the HTML 5 specification be broken off and assigned to new workgroups.

That might not be as radical as it sounds, according to Forrester analyst Jeffrey Hammond, who believes that it makes sense to subdivide HTML 5 into smaller, more manageable pieces. "I can't even imagine how many years it will take browsers to implement it [HTML 5]," Hammond posited. "How do you eat an elephant? One bite at a time."

Wilson explained that several pieces of HTML 5 would be equally useful outside of it, particularly for Web applications and content. Those bits include such features as the Canvas APIs, which are used to render



moving graphics; offline caching of Web applications' resources; persistent client-side data storage; and the peer-to-peer (P2P) networking connection framework.

Hammond noted that examples of those technologies are already prospering outside of HTML, such as local storage in Google Gears, and to him, the popularity of technologies like Flash and Silverlight demonstrates that there is a demand for the Canvas APIs. "These two in particular make a lot of sense to me ... to split off from the larger specification and move [HTML 5] forward more rapidly," Hammond said.

Larry O'Brien, an independent analyst and consultant who

writes the Windows & .NET Watch column for SD Times, demurred, stating in an e-mail: "Canvas APIs define a resolution-dependent bitmap area. While somewhat of a half-step in HTML 5 (in that they are limited to 2D), it seems to me that this is an area where greater integration with text-markup is probably called for."

Microsoft's Wilson noted that development of the P2P framework would likely advance more slowly because of technical considerations, adding that working with the Canvas APIs would require specialized experts.

The work on the next-generation Web protocol is ambitious indeed. New attribute and element tags will embed audio and

video content and will simplify indexing by search engines, rendering on small-screen devices and using voice readers for the visually impaired. Some deprecated elements—center, front and strike—were dropped in favor of CSS, because it provides the same functionality.

HTML 5 has additional APIs for audio, graphics and video, and interactive document editing.

In an attempt at flexibility, HTML 5 can be written using either an HTML or XML syntax, and the specification has precise rules for handling and recovering from syntax errors. HTML 4 browsers can ignore HTML 5 constructs, and existing HTML content remains usable.

Hammond questioned why browser vendors should wait for full compliance before they allow people to take advantage of HTML 5's features. Web browsers including Firefox 3, Internet Explorer 8, Opera 9.5 and Safari 3.1 already have begun to implement aspects of its language elements and offline storage capability.

World Wide Web Consortium (W3C) spokesperson Michael Smith acknowledged that HTML's new functionality

makes the specification large, and that a general agreement among most working group members exists that some parts of it would be better off as sub-specifications.

However, he cautioned that it was not a simple task to define the core set of APIs that should be together and what should be separated out; delegating that decision could lead to those essential APIs getting out of sync with HTML.

Smith pointed to the Document Object Model (DOM), which was a separate specification prior to its implementation in HTML 5, both as an example of that desynchronization and as a specification that is useful outside of HTML.

So for now, nothing changes as far as the W3C goes. Smith noted that while modularization of specification is a good idea in principle, the consortium needs a commitment from one or more member organizations to take over a part of the specification. "We don't have that; nobody has stepped up," he said.

When asked for a commitment, Microsoft's Wilson said that the company was willing to step up but observed that the task of an editorship is tough. ■

Its work done, component group dissolves

BY DAVID WORTHINGTON

Components are popular today, but the idea took a while to catch on. Ten years ago, the assumption was that "real developers" didn't buy components. The component market has since grown fiercely competitive, leading to the demise of one industry trade group.

May will see the formal dissolution of the Component Vendor Consortium. Founded in 1999 as a nonprofit organization, CVC was established to advocate component usage, facilitate intravendor testing and compatibility, and implement component quality standards.

Its final president, Sax.net president and founder Mike Sax, said that CVC had achieved "many times over" its primary mission of doubling the size of the component market.

In essence, he said, CVC

had become a group in search of a mission. "It did not make sense to keep the organization around. We decided to no longer have a formal organization and instead continue to do work individually."

Microsoft was an early partner in CVC, but its decision to focus on its own partner program also contributed to the organization's demise. Sax explained that Microsoft hesitated to start a component partner program, but soon recognized the value of the component market and wanted to bring the program in-house.

But it wasn't a hostile move, Sax said, noting that Microsoft continued to support the CVC financially through co-marketing and member benefits.

"Although the organization's budget was reduced, the increased visibility and commit-

ment (with internal resources) to components on Microsoft's part was very beneficial for the CVC's member companies," said Sax in a later discussion by e-mail.

Component makers now fall under Microsoft's Visual Studio Industry Partners (VSIP) program and the Microsoft Component Builders Program. Microsoft's liaison to CVC, VSIP program director Joe Marini, the director of Microsoft's Development Tools Partner Ecosystem, said that while Microsoft does not tailor the program to any one subgroup of the program for logistical reasons, the company has given component vendors a specific section in the Visual Studio Gallery and set aside time for component makers to engage the audience at TechEd. "We don't really do that for many categories of

VSIP members," he said.

Atalsoft president Bill Bither said that CVC had been a "really big help" to Atalsoft, allowing it to advertise more effectively. For example, its first ad in SD Times was placed through CVC. "We would have liked to have seen it continue. VSIP doesn't exactly suit component vendors," he lamented.

Software FX president Rene Garcia agreed with Bither's VSIP assessment. "Unfortunately, a vendor-centric program such as Microsoft's VSIP Program is not the right forum for component vendors to discuss and deal with important issues that affect our community and our customers," he noted in an e-mail.

Garcia noted that while the VSIP program is useful, it is just an official information channel from Microsoft to its partners. The range of partners in the pro-



Mike Sax: Time to replace formal organization with individual work.

gram results in an untargeted message that is not tailored to component makers, he said.

The idea of promoting components for components' sake has also taken a back seat under Microsoft's leadership, it seems. Garcia believes that it comes down to those vendors that

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COMPLETE YOUR DATA VISUALIZATION AND REPORTING TOOLBOX

Being a developer is about making things work, pulling together requirements and architecting solutions. This can mean tying components together to access and present data, completing business functions, or integrating disparate systems. For many, creating compelling visual models and engaging reports is a tedious process that only makes the job that much harder. It might not be so bad if end user requirements were static, but unfortunately, that's not always the case. Successful application developers gain that status, in part, because they are able to answer the problem of data presentation and the challenge of changing user requirements.

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Telerik ships ASP.NET component suite

BY DAVID WORTHINGTON

In antiquity, Prometheus brought fire to mankind. Telerik hopes to catch some of that spark with its latest ASP.NET-based component suite.

Last month, Telerik shipped RadControls for ASP.NET AJAX, formerly code-named "Prometheus." The suite encompasses RadControls for WinForms and Telerik Report-

ing and is built using Microsoft's ASP.NET AJAX platform.

Chief technical evangelist Todd Anglin wrote in a blog entry that Telerik's RadGrid-View WinForms control has

been overhauled for this release. Two new controls, RadCarousel and RadForm, have debuted, and the suite comes with several demo applications.

Telerik Reporting, a tool for

ASP.NET and WinForms viewers, has an integrated designer for Visual Studio with updated layout support. Also included is a user interface for accepting runtime user-supplied parameters and the option to export to RTF.

The company also announced a community technology preview of RadControls for WPF, its first foray into the Windows Presentation Framework component market. The initial release bundled a carousel and grid control.

In a discussion with SD Times, Anglin said that a suite of Silverlight controls would follow the WPF preview. He expects Telerik to ship both suites before the end of the year.

Telerik has separate teams dedicated to Silverlight and WPF. Anglin noted that though there is overlap between the technologies, Telerik would optimize controls for each platform. ■

Mobility at core of BizTalk RFID

BY DAVID WORTHINGTON

Business processes are often visualized as an assembly line, but that assumption falls apart when RFID enters the picture, since these tags are often on the move. Microsoft is updating BizTalk to accommodate the requirements of business process where mobility matters.

On April 17, Microsoft unveiled a beta version of Microsoft BizTalk RFID Mobile at RFID Journal LIVE 2008 in Las Vegas. The company expects the final version of BizTalk RFID Mobile to ship toward the end of the year.

Steve Sloan, lead product manager of Microsoft's connected systems division, said that BizTalk RFID Mobile will address challenges specific to the technology by managing RFID devices and connectivity to back-end systems.

"It creates a layer for partners to build applications on top of [without worrying] about the complexity of managing readers and the mix of devices from manufacturers," he added.

BizTalk RFID Mobile runs on top of Windows CE and Windows Mobile 5.0 and communicates back to BizTalk 2006 R2 servers.

Mobile RFID readers are used in a variety of scenarios, such as a pharmacist determining whether the right medicines have been stocked. ■

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Scrum requires big change but delivers results

Software Test & Performance Conference keynoter espouses agile development

BY ROBERT MULLINS

SAN MATEO, Calif. — A leading evangelist for Scrum software development says that the method takes some getting used

to, but it does its job: create a quality product with few bugs.

"It's all about people, and a few bugs," said Robert Sabourin, president of software

development consulting firm AmiBug.com, and keynote speaker at the Software Test & Performance Conference on April 16.

Sabourin presented two case studies of the software development problems faced by his client companies, which he did not identify, and how Scrum

addressed those issues.

Scrum is a form of agile software development that involves a closely linked team of developers, testers and product managers incrementally developing and testing software in an iterative process. The term comes from rugby, and it describes how play resumes with players from each team grappling for the ball.

Scrum iterations, which typically last between 15 and 30 days each, are supposed to end with the creation of "shippable code," he said.

WHY ONE PROJECT FAILED

In one case study, a data processing company thought it would do a pilot project in Scrum to see how it might work, but shortchanged the project in many ways, Sabourin explained. Software development teams and testers were in different locations, the product "owner"—the person in the company who would use the software—was not fully engaged in the project, and the development team was constantly being interrupted by IT support issues elsewhere in the company. The project also suffered from redundant bug tracking.

"It was an inertia problem," Sabourin concluded. He recommended that they choose a more important project as a pilot and treat it like a real project. He added that development and testing teams should be co-located and that the product owner should be fully engaged. What's more, redundant bug tracking should cease.

In a second case study, an information management company was bogged down with documentation that had slowed the development process. The company had seven levels of design documentation that took three months to approve. Documentation was inconsistent and testing procedures were "heavily scripted," Sabourin said.

The Scrum project that he recommended replaced documentation with "storyboards" that explained more simply what the customer needed the software to do. Sabourin paraphrased John F. Kennedy: "Ask not what your software does for users. Ask what your user does with your software."

The Software Test & Performance Conference was produced by BZ Media LLC, which also publishes SD Times. ■



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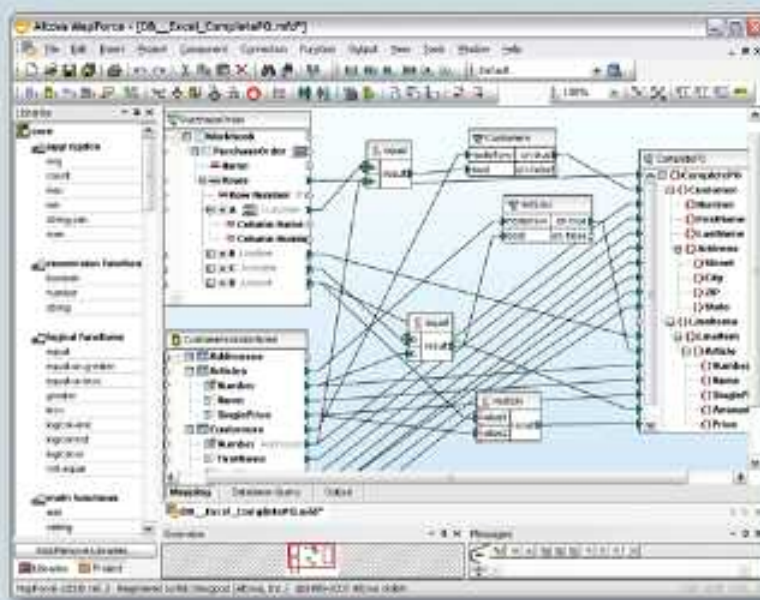
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NEWS BRIEFS

COMPANIES



Microsoft will work with the **Telefónica Foundation** to promote technology education for teachers and students in Latin America. The foundation is tasked with carrying out the Spanish telecom giant's social and cultural action plans in Spain and the Americas and will team with Microsoft to expand an online network for providing content and services to help teachers learn about IT resources . . . **IBM** has awarded research grants to five universities that will enable them to use the company's **Jazz** platform for developing software in a collaborative environment. Schools in three countries received this second round of Jazz grants: Brown University, Carnegie Mellon University and North Carolina State University in the U.S.; the University of Calgary in Canada; and Saarland University in Germany. The grants are designed to help university students learn how to build software as a global team . . . **Sun Microsystems** has chosen the Oracle-led **EclipseLink** project as the reference implementation for a Java persistence API. EclipseLink is short for the Eclipse Persistence Services Project, which has developed a runtime framework that supports persistence standards, allowing Java developers to interact with relational databases in creating Java EE or Java SE applications.

NEW PRODUCTS

Intel has unveiled a release candidate of its **SOA Security Toolkit**, which provides security for SOAs by using XML digital signatures and encrypting SOAP messages. Version 1.0 of the toolkit, available for Linux and Windows, complies with WS-Security and SOAP standards. Users can provide their own XML policy file as an input . . . **LogiXML** has created the **Logi ETL** (Extract, Transform and Load) tool for integrating enterprise data into a consistent format to work with corporate applications. Logi ETL is a Web-based data integration application that is data source-neutral and browser-independent, and it can transfer data from different sources to multiple destinations . . . **Fortify** has created **Fortify 360**, a suite of integrated security products that allows dynamic analysis of applications during quality assurance testing and real-time monitoring of applications after deployment. The product is part of the company's new security strategy, called "Business Software Assurance," that attempts to minimize business risks associated with software exploitation . . . **IBM** has created a **social network for SOA**, so that IT and business professionals can share best practices in a public forum. IBM said it has an SOA network of more than 120,000 architects and developers and over 130 universities contributing to IBM's SOA "curriculum." The social network will host its virtual meetings in Second Life, an Internet-based virtual world.

UPDATES

Neotys, a provider of load testing tools for Web applications, has made available **NeoLoad 2.4** with new modules that can integrate with Adobe Flex, Oracle Forms, and other rich Internet applications (RIAs). NeoLoad is stress-testing software for Web applications that doesn't require scripting, the company said. Now, it can also work with AJAX . . . **EditGrid**, an online spreadsheet company, has created a plug-in for the **Atlassian Confluence** enterprise wiki software. The plug-in lets licensed Confluence users view and edit spreadsheets on wikis, and it allows multiple users to edit spreadsheets simultaneously. The plug-in also can retrieve live financial data on the Web, and it includes a chat application.

PEOPLE

Recognizing their technical prowess, 74 technical experts from IBM were appointed Distinguished Engineers, including IBM Rational's **George DeCandio**, **Scott Rich** and **Leigh Williamson**. DeCandio is credited with helping build VisualAge for C++ and IBM WebSphere Studio, and Rich has contributed to various Rational products. Williamson was an architect of WebSphere. ■



Open XML captures ISO approval after bitter battle

Microsoft vows to work toward interoperability

BY DAVID WORTHINGTON

After months of politicking by partisans for and against its acceptance, the fight is now over: Office Open XML (OOXML) has been certified as an ISO international standard. Although some are skeptical of the outcome, with claims made of chicanery and strong-arm tactics, the matter appears settled.

The ISO confirmed last month that OOXML had gained sufficient support from ISO voting members and "P-members" that took part in the technical committee to reverse the results of last September's ballot rejecting its "fast track" standardization.

National standards bodies were given 30 days to reconsider their votes after a Feb. 29 ballot resolution meeting concluded without a consensus on how to modify the specification to satisfy objections registered in the September vote.

Approval required that a minimum of two-thirds of votes cast by P-members were positive and no more than one-quarter of the total national body votes were negative. Those criteria were met with 75% of participating members voting to approve and only 14% of national member body votes voting against adoption as an international standard.

On March 28, Denmark reversed its previous disapproval and decided to back the format.

Croatia, Germany, Norway, the Philippines, Poland and the United Kingdom likewise moved to support its standardization.

Other national standards bodies, including Australia, failed to take a position for or against its adoption. Australia maintained its "abstain" vote, citing a lack of consensus among its delegation. France shifted its vote from "no" to "abstain," which contributed to OOXML's passage.

The ISO has designated OOXML as ISO/IEC draft international standard 29500, and the ISO/IEC Joint Technical Committee 1 Subcommittee 34, as the body responsible for document description and processing languages standards, will oversee 29500.

The committee, which will meet this month in Oslo, Norway, assumed responsibility for OOXML's evolution and maintenance on April 9, wrote Brian Jones, Microsoft Office Program Manager, in a blog posting on that date.

Tom Robertson, general manager of interoperability and standards at Microsoft, said that Microsoft intends to be an active participant in that process to "make sure that [the technical committee] is positively contributing to the specification so it's the right one at the end of the day for users and the industry." He said that Microsoft is committed to implementing ISO 29500.

OOXML's ratification was not without controversy, and not everyone agrees that it is right for the industry. Accusations of manipulation and strong-arm tactics piled up during the closing days of March; irregularities have been alleged in Germany, Norway and elsewhere, and there is an effort under way in Norway to reverse its OOXML vote.

Steve Pepper, chairman of the Norwegian mirror committee to the ISO, published a declaration informing interested parties of "serious irregularities" in connection with the Norwegian vote and called for an investigation by the Norwegian Ministry of Trade and Industry.

In response, Norway's Standard Norges, the group responsible for the vote, issued a press release with a detailed explanation about its decision. Even without Norway's vote, OOXML would still meet the ISO requirements, with 71.8% of the remaining P-members supporting it.

'MISLEADING' REPORTS

Perhaps to head off similar controversy, Germany's national standards body, the German Institute for Standardization, issued a statement saying that reports circulating on the Internet regarding its voting procedures were "false and misleading." The reports claimed that the opposition was not seated in the meeting room during final deliberations.

continued on page 25 ►

MySQL community sees growth potential under Sun

BY ROBERT MULLINS

Increased visibility for the MySQL open-source database management software is expected now that Sun Microsystems owns MySQL, Sun CEO Jonathan Schwartz said at the MySQL Conference & Expo April 15 in Santa Clara.

Some in the audience agreed, while others are waiting to see what happens, and with the MySQL road map apparently remaining unchanged for now, both groups may turn out to be right.

MySQL's prospects "will be better under Sun because we [will] have more resources to help do what we need to do," said Sheeri Cabral, team lead at enterprise database management service provider The Pythian Group. Cabral also received an award at the conference for promoting MySQL through events and other efforts.

The process of integrating MySQL's 400 employees into Sun's 32,000-person workforce is continuing; the US\$1 billion acquisition was completed on Feb. 26.

MySQL has already reached 12 million downloads, with an additional 60,000 per day, and the developers using the software all stand to benefit, said Marten Mickos, MySQL's former CEO and now a Sun senior vice president.

OPEN-SOURCE EDGE

The new advantage lies in Sun's role as "the biggest proponent of open source today," Mickos said.

Software developers using MySQL can also employ Sun's GlassFish application server, its NetBeans development environment or OpenSolaris, the open-source version of its commercial Solaris operating system, he said. "But no one's pushing you," he added.

For entrepreneurial MySQL users seeking to make a business out of their software development, they have a larger ecosystem, distribution channel and a quicker path to market for their ambitions, Mickos said.

The implications of the acquisition are less evident to others, though.

"We're waiting to see," said Donna Burke, vice president of marketing and product management for Exadel, a provider

of database access software and services and a conference exhibitor.

"It's not evident to us what impact it will have," said Burke, who noted that in a meeting at

the show, MySQL officials said the product roadmap would not see drastic changes right away.

During the show, Sun introduced a prerelease candidate of MySQL 5.1 (see story, page

23). A final version is slated for general availability by the end of June.

Although Exadel supports MySQL for its customers, it also works with other database

platforms, including Oracle, PostgreSQL and Sybase, according to Burke.

Still, she said, the acquisition "secures MySQL in the marketplace." ■

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Upgrade to Delphi PHP widens database support

BY ROBERT MULLINS

The Web is all about dynamic data these days, and developers using PHP have a new tool to consider for their use, one that offers new debugging features

and “shake-and-bake” HTML templates.

CodeGear released version 2.0 of its Delphi for PHP development environment today, adding wider database support,

an expanded Visual Component Library (VCL), a new debugging tool and other changes.

Delphi for PHP 2.0 now supports database programs from a number of vendors, including

CodeGear’s own InterBase, IBM’s DB2 and Informix, Microsoft SQL Server, Oracle, PostgreSQL, Sun’s MySQL, and Sybase’s Advanced Server and SQL Anywhere. It enables de-

velopers to create data-driven Web applications without requiring database connectivity coding, CodeGear said.

The upgrade also adds HTML templates with embedded dynamic PHP so that PHP developers can more easily work with HTML developers.

The expanded VCL supports popular PHP packages and libraries, including the Zend Framework. In addition to the new debugging tool, version 2.0 offers integrated profiling and tuning features to improve application performance.

Delphi for PHP 2.0 lists for what CodeGear called “a special introductory price” of US\$249 through June 2008, while upgrades from Delphi for PHP 1.0 will cost \$179. ■

SQL ANYWHERE PANORAMA PREVIEW ROLLS

BY P.J. CONNOLLY

Meeting the requirements of increasingly complex technology is the theme of the next release of Sybase iAnywhere’s database management tools. SQL Anywhere 11, expected to ship by year’s end, is now available as a beta.

Code-named “Panorama,” SQL Anywhere 11 offers reworked parallel query capabilities for the latest multicore systems. Also included are embedded full-text search features to improve access to unstructured data on devices in the field and in the hands of “road warrior” executives.

The data synchronization features of SQL Anywhere 11 are updated with new failover and load-balancing capabilities, background synchronization, and the SQL Anywhere tools that now work with Sun’s MySQL database.

Also featured in the beta release is support for .NET and Perl-stored procedures, allowing the execution of database logic as written by an application programmer, and, by the company’s count, more than 196 other enhancements and new features.

The beta is open to developers, with registration on Sybase’s Web site. ■

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Office, SharePoint Server protocols documented

Microsoft eyes June delivery of documentation for selected products

BY DAVID WORTHINGTON

A new wave of technical documentation suggests that Microsoft is on track to deliver the first protocol documentation for a selection of its high-volume products next month.

The company has posted 14,000 pages of preliminary documentation for essential Microsoft Office 2007 and SharePoint Server protocols on its MSDN site. Included in this wave is documentation for:

- Protocols between SharePoint Server 2007 and Office client applications;
- Protocols between SharePoint Server 2007 and other Microsoft server products;
- Protocols between Exchange Server 2007 and Outlook; and
- Protocols between Office 2007 client applications and other Microsoft server products.

Back in February, Microsoft had announced a major interoperability initiative. In so doing, the company committed itself to publish by June the documentation for the APIs of the above products as well as others, including Exchange Server 2007, SQL Server 2008, Windows Server 2008, Windows Vista and all future releases of those products. What's more, Microsoft vowed to provide documentation for protocols related to the .NET Framework within the same time frame.

Access to the documentation of those protocols is free, but implementing them is another matter, because they remain Microsoft's intellectual property. The company said that it would grant licenses to all relevant patents at "fair" and "non-discriminatory" rates, without

actually discussing the terms.

"We believe that providing open, consistent access to these protocols will further unleash

the creativity of all developers to work on real-world interoperability solutions," Tom Robertson, general manager of

interoperability and standards at Microsoft, said in a prepared statement. "The implementation of Microsoft's interoper-

ability principles is an important component of our overall efforts to promote interoperability in the marketplace." ■

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Algorithm draws .NET and Java closer

BY ROBERT MULLINS

Mainsoft, which has built its business helping .NET and Java EE programs work well together, has introduced an upgrade that includes a new algorithm to speed the conver-

sion of binary code to text.

Mainsoft for Java EE, version 2.2, adds support for Microsoft's ASP.NET 2.0 AJAX extensions for creating Web applications, the company said. The AJAX Control Toolkit helps to add fea-

tures to a site, such as a drop-down menu or a submit button. With the upgrade, developers using Microsoft's Visual C# and Visual Basic languages can use ASP.NET 2.0 components to create applications that could

run on a Java application server, Mainsoft said.

Version 2.2 is an upgrade from 2.0, which Mainsoft released in June 2007.

Yaacov Cohen, Mainsoft president and CEO, explained

that the new release decouples development and production decisions.

The new software includes an algorithm to more quickly convert binary code to text, said Eyal Eliahu Alaluf, vice president of technology at Mainsoft.

The new algorithm increases the speed of conversion and improves overall application performance by 4% to 5%, he said.

The overhauled algorithm also boosts scalability, Cohen said, which allows more people to use a Web application at the same time.

Mainsoft is donating the conversion algorithm to the Mono open-source community, which was established by Novell to create tools to allow .NET applications to run on platforms other than Windows. ■

TOOLKIT ALLOWS SELF-MARKETING SAAS OFFERINGS

BY ROBERT MULLINS

With so many people chasing the SaaS dollar, Jamcracker has recognized that success hinges as much on how the service is marketed and delivered as it does on the service itself.

The company's namesake Jamcracker Integration Toolkit (JIT), launched April 9, makes it possible to provide SaaS offerings through the Jamcracker Services Delivery Network.

JIT is an XML-based framework that allows software services to be published to the JSDN Global Services Catalog. With the kit, the products can be made JSDN-ready even without in-depth knowledge of the Jamcracker Platform, the company said. In addition, SaaS ISVs in the JSDN can use Jamcracker services to handle administrative and support tasks.

Jamcracker said it provides ISV developer support as well as certification and acceptance testing of the JSDN adapter.

Other companies serving the SaaS enablement market include NaviSite, OpSource and WebAppCabaret. The business is expected to expand in step with overall revenue from SaaS, which Gartner research indicates will grow at a compound annual rate of 22.1% through 2011. ■

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Technical Director, Information Technology, Walt Disney Studios

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Borland reloads test management for Flex, AJAX

BY P.J. CONNOLLY

Testing is becoming increasingly important as companies seek to wring more efficiency and better results out of their software development. Borland Software, continuing its open life-cycle management focus, thinks it has some answers to the questions involved in producing high-quality software.

The company last month released the Silk 2008 line of testing tools with the goal of breaking down barriers among

business, development and quality assurance, and providing solutions to quality issues earlier in the development cycle.

SilkTest 2008 features a new "open agent" that supports emerging Web 2.0 applications

built on Adobe Flex and Windows. Later this spring, the company plans to provide an Eclipse interface and Java language scripting support in SilkTest.

The SilkPerformer 2008 release offers customers trying

to scale rich Internet applications new horizons in load and performance testing, including the use of AMF3 (Adobe's ActionScript serializer) for Flex applications and readability and recognition of JSON and XML

requests for AJAX scenarios.

SilkCentral Test Manager has also seen some work for 2008, in flexibility for manual testers, security and scalability, in an attempt to meet the needs of large yet distributed development teams. Test asset reuse and management also received attention in the new release. ■

RHAPSODY'S C SUPPORT AIMS AT UML MODELS

BY DAVID WORTHINGTON

A model-driven development tool has been updated to honor the structure of C code when creating Unified Modeling Language (UML) models.

Telelogic Rhapsody 7.2, which was expected to become available late last month, targets embedded developers by making it possible to import existing C code into UML while preserving functionality, order and structure, the company said.

Rhapsody's "code respect" capabilities make model-driven development in C more attractive to embedded developers porting memory-sensitive applications to UML, said Paul Urban, a marketing manager at Telelogic.

Previous editions of Rhapsody could reverse-engineer C code into a UML model but did not necessarily honor its function or structure.

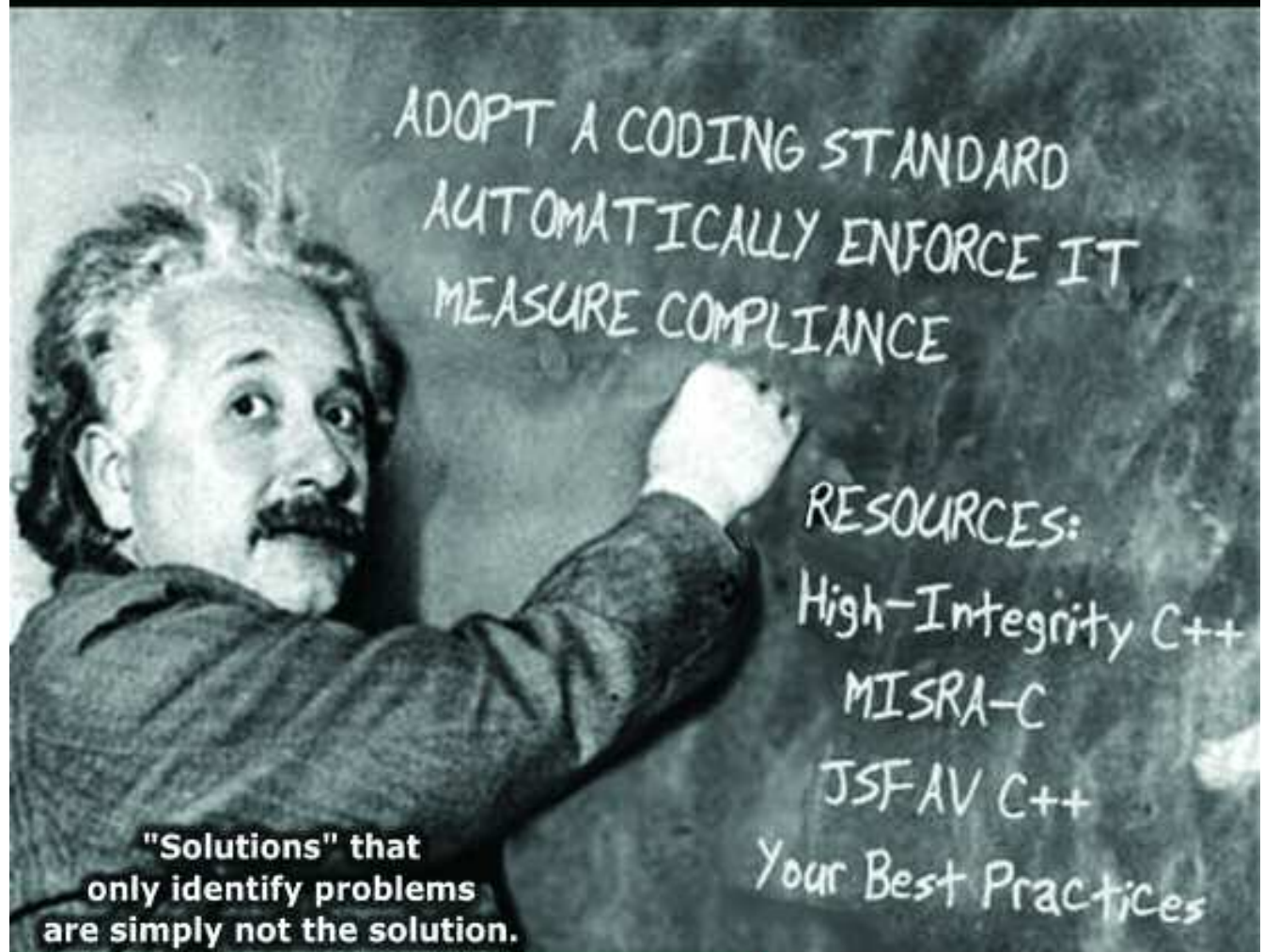
Rhapsody also includes model-based testing for C in this release. Users can conduct automated unit tests, requirements-based tests and simulations from within Rhapsody.

But that's not all that meets the eye in this release: Rhapsody 7.2 provides systems engineers with visual prototyping capabilities for simulations. Systems Modeling Language, a subset of UML, drives Rhapsody's integrated graphical panels that are used for prototyping and validating mockups.

In addition, Telelogic announced that a Rhapsody Eclipse plug-in would ship this summer. The plug-in would bring the modeling tool into the Eclipse environment. ■

Intellectuals solve problems. Geniuses prevent them.

— Albert Einstein



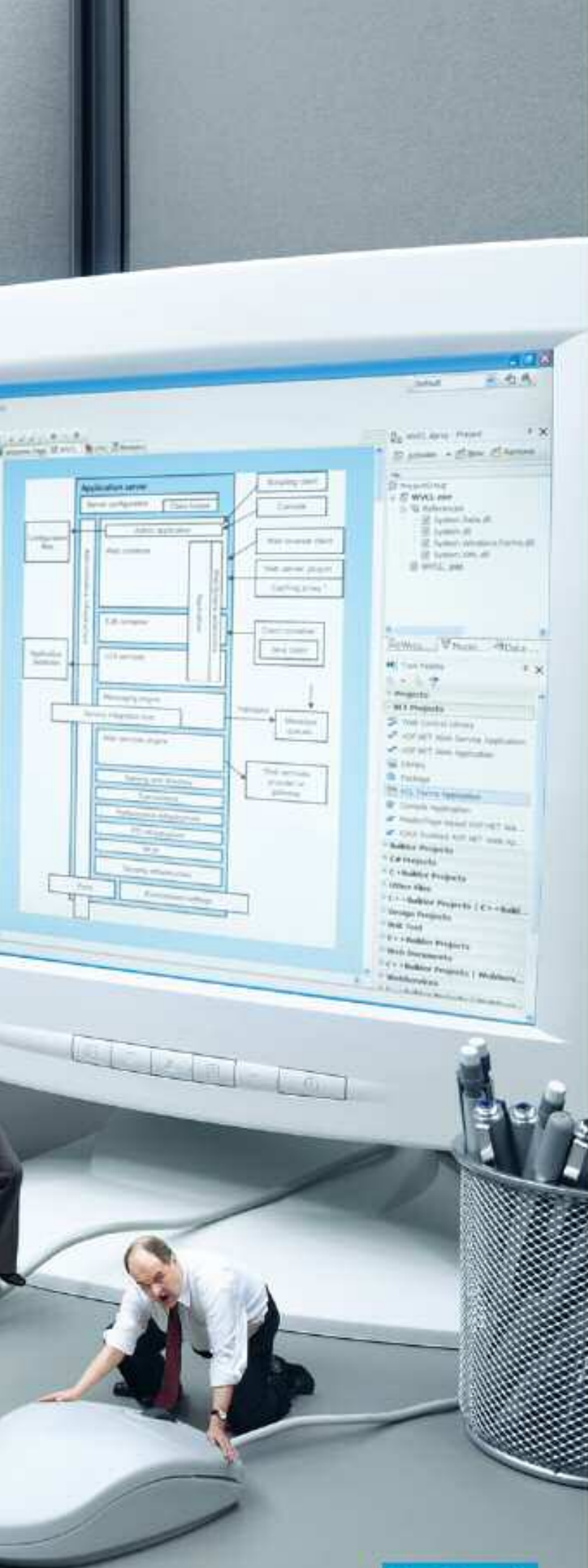
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Java EE app analyzer ported to .NET

Helps developers troubleshoot application performance problems

BY DAVID WORTHINGTON

A mature Java EE application analytics and monitoring solution has been ported to Microsoft's .NET platform.

OPNET Technologies made OPNET Panorama 5.0 generally available on March 25. For the first time, Panorama provides life-cycle performance management for .NET and Java, as well as Java environments within multi-tier infrastructures.

The .NET features, new in this release, cover dynamic threshold alarms, events and metrics correlation, identification of application errors through code instrumentation, and measurement collection.

P.J. Malloy, vice president of engineering for application performance solutions at OPNET, explained that Panorama's core technology is byte code instrumentation. OPNET takes advantage of hooks in the .NET Common Language Runtime (CLR) to instrument applications when classes are loaded.

Malloy explained that Panorama avoids rewriting developers' code by "surgically" implanting instrumentation points through .NET and J2EE APIs designed for that purpose.

Panorama may be deployed in production environments without being a drag on performance, by monitoring the overhead

it introduces and turning off its own instrumentation as necessary, he noted.

Panorama garners additional statistics from the CLR, including metrics for garbage collection, global health and heap utilization, and listing threads spawned by a process, Malloy added.

"We borrowed heavily from lessons learned from instrumenting Java at that

level of detail. Customers told us that we had to move beyond Java; we recognized that, and have worked on [.NET support] for a while," he said.

He added that OPNET would expand Panorama's .NET coverage in the future with more automated analysis, more sophisticated memory analytics and a better overall user experience. ■

WebUI Studio.NET suite updated

BY DAVID WORTHINGTON

Component maker Intersoft Solutions has shipped its first major release of the year, WebUI Studio.NET 2008 R1.

The offering introduces four controls and improves three others: WebCombo.NET, WebGrid.NET and WebDesktop.NET ASP.NET.

Two controls are bundled with WebAqua.NET for Silverlight, a product extension to the suite. Those are WebFishEye.NET, a navigation control that is modeled after the Mac OS X dock, and WebCoverFlow.NET, which displays pictures and video thumbnails in a slideshow.

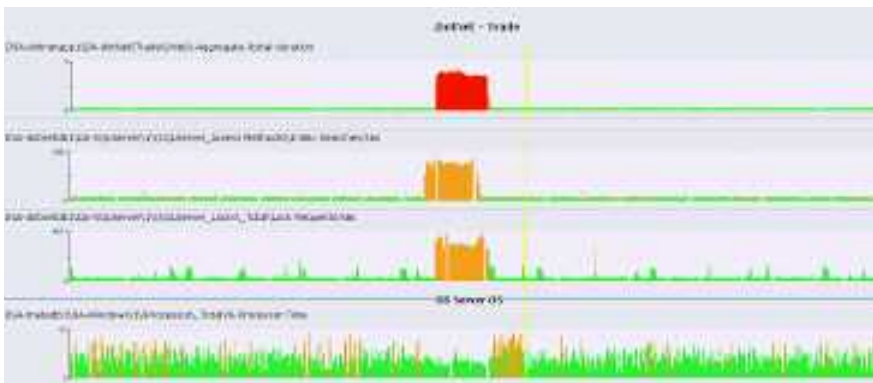
The controls were built using Silverlight 1.0, said Jemmy Haryono, the

marketing officer of Intersoft.

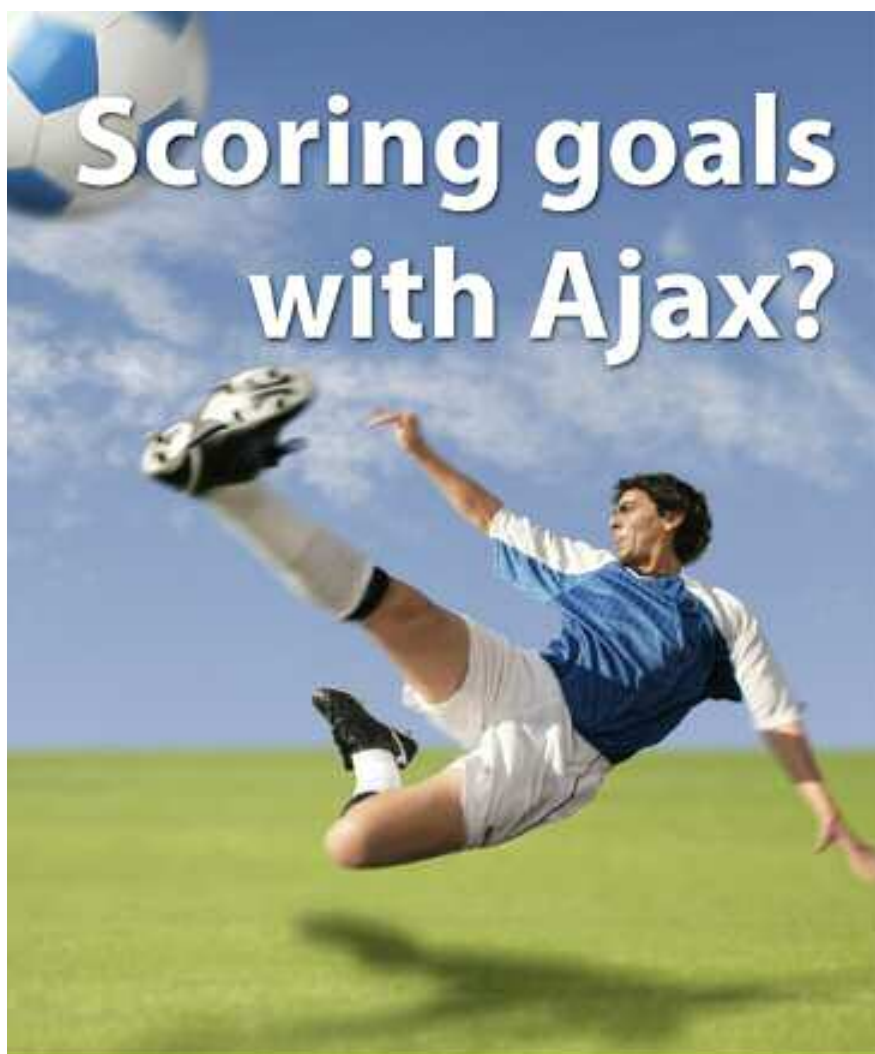
Another new control, WebCallOut.NET, is an addition to WebDesktop.NET, which lets developers build context-sensitive assistance into their ASP.NET applications.

Finally, WebScheduler.NET is a cross-language scheduling component with coverage for every language version of the Microsoft .NET Framework. The control can bind scheduling data to database schema via Intersoft's ISDataSource.NET 1.0 data source component.

Existing controls now support client-side events and Opera and Safari browsers. Intersoft said it has increased integration between components. ■



Panorama 5.0 instruments programs for application analytics and performance monitoring.



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IBM Rational officially subsumes Telelogic

BY ROBERT MULLINS

IBM has completed its US\$845 million acquisition of Telelogic, giving Big Blue more leverage in the post-PC market for software applications in wireless devices,

automobiles, home appliances and even robots.

IBM said that Telelogic is now part of IBM's Rational division.

Telelogic's software tools are used in embedded complex sys-

tems development, serving such customers as Boeing, Siemens, Sprint and Toyota, IBM said. IBM and Telelogic together will more strongly link hardware and software design, better

manage systems engineering efforts, ensure standards compliance and coordinate all development team efforts.

IBM took a jab at competitors HP and Microsoft in announcing

the Telelogic closing. It compared its software and systems offering to Microsoft's and said that Redmond's "proprietary software strategy and lack of large-scale system development expertise naturally hinders their ability to play in this space." While HP is building a software portfolio through acquisitions, IBM said that HP must "first learn to walk in software development before they can run in systems development."

Growth opportunities appear better in the non-PC arena than in PCs, IBM said, citing industry research. Venture Development Corp. reported that the market for embedded software development products totaled US\$51 billion in 2005, while Embedded Market Forecasters reported that the market for traditional, PC-based software development was only \$292 million that same year.

Telelogic, with headquarters in Malmö, Sweden, and Irvine, Calif., has 8,000 customers and 1,200 employees worldwide. ■

ComponentArt unites UI elements and Web services

BY DAVID WORTHINGTON

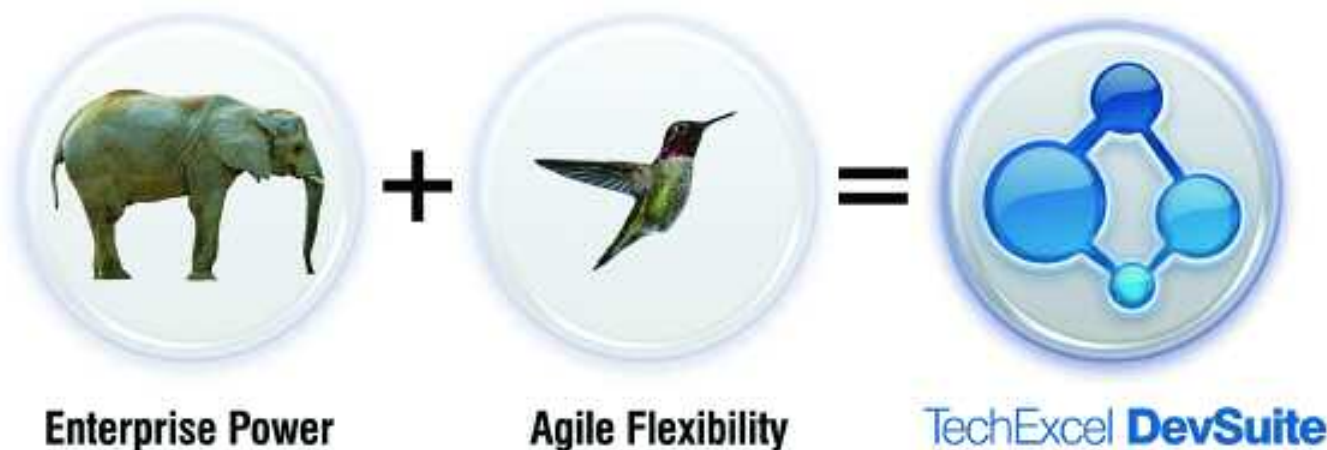
A component maker has married ASP.NET 3.5's ability to invoke Web services from client-side controls with its own user interface (UI) rendering technology to automatically update UI elements.

ComponentArt has released Web.UI 2008.1, a suite of user interface controls for ASP.NET. For the first time, every control can serialize JavaScript Object Notation (JSON) from a Web service to create a UI structure in a client control.

Microsoft built APIs for client-side binding to Web services into ASP.NET 3.5, as part of .NET Framework 3.5. Controls that invoke Web services do not need to use server callbacks, improving response time.

ComponentArt president Miljan Braticevic said that JSON is used in AJAX programming as a performance technique because it is optimized for size and is efficient in terms of client-side performance and its page footprint.

For added performance, JSON data is rendered in ComponentArt's own optimized format, which uses multi-dimensional JavaScript storage arrays to represent data, he said. ■



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SlickEdit aims to reduce drudgery

Code editor enables process output views, Perl regular expression syntax

BY P.J. CONNOLLY

It's generally assumed that one can become more creative by minimizing the amount of repetitive drudgery, and developers insist that their text editing tools be both flexible and intelligent enough to handle chores that are easily automated.

In hopes of meeting that goal, SlickEdit announced the release of SlickEdit 2008, a cross-platform, multilanguage code editor. The update includes such new features as the ability to view output from build tools and other processes running in SlickEdit.

The company has also tried to make its namesake editor easier to configure by collecting the options dialog into a tree view, with choices displayed as either embedded forms or in a tabular format.

Installed language support has seen some work too, and new file extension and language manager screens in the options

dialog allow the use of extension remapping. That way, the developer sees the options appropriate for the language in use.

Adaptive formatting lets developers use existing code libraries as formatting sources, while Quick Brace converts sin-

gle-line statements into brace-enclosed blocks.

SlickEdit 2008 supports Perl regular expression syntax.

Other new features include full SCIM support, a debugger, and new ways to handle URLs in editor windows and through mapping, in code. Automatic symbol translation is meant to keep developers focused on code instead of making them rummage through tables of entity references. ■

Adobe AIR for Linux alpha rolls

BY ROBERT MULLINS

A prerelease version of an Adobe platform for building rich Internet applications (RIA) for Linux platforms is now available.

Adobe recently announced the alpha of a Linux version of Adobe AIR through Adobe Labs. AIR, released late last month for Mac OS X and Windows, is designed to let developers run their applications on various desktop systems without writing additional platform-specific code, the company said.

Also, developers can use Adobe Flash to add animation and use the open-source Adobe Flex framework, plus AJAX and HTML, to write RIAs and deploy them on Mac, Windows and Linux machines using AIR.

Adobe also has made available an update to the alpha version of Adobe Flex Builder 3 as a free download. The update adds support for AIR.

The Adobe AIR free download is available only in English, though the final release, expected out this year, will also be available in other languages, according to Adobe. ■



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Sun lengthens paid support in Java SE

BY ROBERT MULLINS

Sun Microsystems last month released Java SE for Business. It offers up to 15 years of paid support, more than twice what's offered now, but for its free quarterly updates, the length is reduced to three years.

The Java SE for Business platform paid subscription offers three levels of support and is renewable annually, Sun said. The Standard support package sells for US\$10 per employee per year; Premium sells for \$11 and Premium Plus for \$12.50.

The change in business model is intended to offer customers choice, said Bill Curci, Sun's product marketing manager for Java SE. "We want to encourage customers who want to continue getting free support to migrate and stay current with the latest release families. Or, if they would rather stay on these families longer, to offer them that option for a subscription."

Sun has found that some Java users have older versions embedded in their IT infrastructure that they don't want or need to upgrade, while others, especially developers, want to upgrade to the latest version and don't need six years of quarterly updates, Curci explained.

Java SE for Business will be distributed to customers by ISVs, service providers and system integrators.

Customers who choose the Premium or Premium Plus subscriptions also get biweekly updates with fixes that customers can implement, said Roger Calnan, Java SE director for sustaining and support.

"Historically, we would give the fix to [enterprise] customers themselves, but for ISVs and others, we used to do fixes on an ad hoc basis. We need to do that in a more consistent manner," Calnan admitted.

Premium Plus subscribers



Bill Curci: New business model gives choices to customers.

also get custom support for fixes they seek, based on their specific needs. There will be an extra charge for the fix itself, but it will be supported under the \$12.50 plan, said Curci.

"We have a reasonable volume of customers who are running on an older update of a release and might need a fix urgently before they can upgrade," he noted.

Java SE for Business is available for systems running Red Hat Linux, Sun's Solaris 10 and Windows operating systems, but, as a way to entice customers to adopt Solaris, the support is included at no additional cost for Solaris users. ■

ONLINE MARKETPLACE COURTS PROGRAMMERS

BY ROBERT MULLINS

Platform-as-a-service provider Coghead is opening an online marketplace where "journeymen" programmers can build niche software applications and publish them.

Coghead Gallery, launched last month, is an eBay-like marketplace where developers can set up "storefronts" to sell or give away software applications that they've built on Coghead's development platform. The gallery is for developers who perhaps lack the deepest knowledge of programming but have some expertise and an idea for a new application.

"There are maybe 4 to 5 million professional developers in the world who spend their entire day in an IDE. We think there are maybe 20 to 30 million people who are sort of one tier down," said Paul McNamara, CEO of Coghead. "They're journeymen developers, if you will."

The Coghead platform offers an application infrastruc-

ture for adding database management, network access, security or other standard functions.

Individual developers pay nothing to use the Coghead system, but companies pay US\$10 per user, per month.

The company has two publishing models: Open Definition, in which developers give away their software for others to modify, distribute and use; and Protected Definition, in which developers seek to protect intellectual property in an application they're selling. Open Definition is not the same as open source, McNamara said, because developers don't work with source code when creating applications.

Coghead customers have developed niche applications like managing a garden nursery, McNamara said. The gallery lets clients who may have been value-added resellers or custom-applications developers become independent software vendors without raising capital and hiring several engineers. ■

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Developers take RIAs to the enterprise

Two-fifths of those coding Web 2.0 apps are writing for corporations

BY ROBERT MULLINS

REDWOOD CITY, Calif. — While MySpace and YouTube may be the most well-known sites of the Web's so-called second generation, a surprising number of developers are writing similar applications for an enterprise, new research reveals.

Close to 40% of developers creating collaborative programs are writing such Web 2.0 applications for a corporate enterprise, said John Andrews, president and CEO of Evans Data, at a developer relations conference hosted last month by the research firm.

Andrews called that "surprising," given that the best known of these rich Internet applications are consumer-oriented.

Enterprises are using some of the design features of social networking sites—rich graphics, user-generated content and the like—for such business efforts as collaboration on projects by team members in dif-

ferent cities or deployment of enhanced Web applications to workers' mobile devices.

These developers are also widely embracing open-source platforms, Andrews noted, as 70% of developers surveyed use scripting languages such as Perl, PHP, Python or Ruby.

"Web 2.0 is all about quick innovation and quick development," Andrews explained. "[Developers] are enabled by great product, but they're also enabled because of the light-

weight kind of development world that they live in."

Evans also shared with attendees data on the growth of the global developer community.

The survey showed that 42% of developers use agile development methods instead of the traditional "waterfall" method, and 36% plan to adopt agile in the near future. Only 22% had no plans for agile.

Evans also shows that the total developer population continues to grow faster in the

expanding economies of India and China than it does elsewhere. It projects the developer population in India to grow 15% to 16% a year through 2011 and in China by 10% to 12%, while the population in the U.S. will expand only between 3.5% and 4%.

The global population of developers is projected to grow to 17.6 million in 2011 from 13.2 million in 2007, according to Evans.

The population survey is a



Andrews: Developers are tapping features of social networking sites.

projection of trends based on a survey of 1,400 developers worldwide. ■

MySQL 5.1 touts 15% performance jump

Open-source database boosts partitioning, data replication, event scheduling

BY ROBERT MULLINS

SANTA CLARA — Sun Microsystems has introduced MySQL 5.1, during the first MySQL Conference and Expo since Sun acquired the open-source database company.

The upgrade, to be generally available later this quarter, supports five forms of table and

index data partitioning, enabling what Sun called faster query response by scanning only the relevant partitions of data, instead of the entire table or index.

Two new data replication options—row-based and hybrid—offer more efficient and safer replication schemes for

the application. A new event scheduler tool has been added for common recurring SQL-based tasks.

Moreover, for subscribers of MySQL Enterprise, an upgrade adviser warns of bugs that might afflict their systems and recommends how to upgrade their database servers

in order to correct the problem.

"Basically, it's got a 15% performance gain, based on benchmarks, compared with older versions of 5.0," said Zack Urlocker, executive vice president of products for MySQL, which was acquired by Sun this year for US\$1 billion. ■

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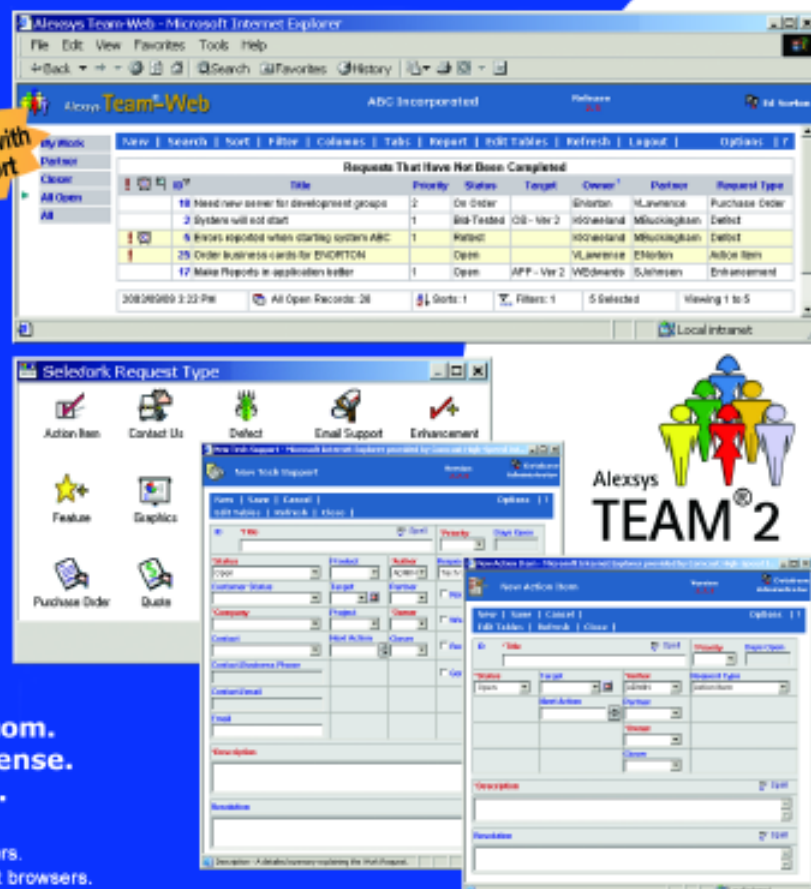
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Iona extends WCF for CORBA and Java

BY DAVID WORTHINGTON

The "legacy" applications on which businesses rely can be difficult to make work with Microsoft's .NET Framework. That's giving one component vendor a chance to show that SOAP isn't always the best way to implement Web services.

On April 1, Iona Technologies announced the availability of a beta of Artix Connect for Windows Communication Foundation. Artix is a SOA infrastructure product that mediates between WCF, a component of the .NET Framework, and other applications.

Artix Connect for WCF lets .NET developers connect their applications with CORBA and Java without using custom adapters or generating new code by using Web Services Description Language interfaces.

Iona CTO Eric Newcomer noted that Artix Connect works behind the firewall, using native binary communication protocols such as JMS (Java Message Service) and Java RMI over IIOP

(Remote Method Invocation over Internet Inter-Orb Protocol) for CORBA systems. He said that native solutions such as Artix's deliver more reliability and speed than do SOAP-over-HTTP Web services.

ZapThink analyst Jason Bloomberg said there is a perennial give-and-take between performance and flexibility. "The advantage to a tightly coupled solution like Artix is that you can achieve higher

performance" than with SOAP-based Web services, he said.

Artix Connect for WCF may be used with more Artix products to connect with IBM WebSphere MQ, mainframe applications (including IMS, CICS and

COBOL), and Tibco's Rendezvous message bus. A general release is expected this month.

Newcomer credits Microsoft for its collaboration around interoperability and said that Microsoft had "thrown the doors wide open" after the announcement of its latest interoperability initiative. ■

CVC: MISSION ACCOMPLISHED

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have a story to say around their upcoming product and technologies to do it themselves.

"In this sense, it is Microsoft actually leveraging our user base to promote their products and .NET-related technologies, or a good MS-partner symbiosis if you want to put it more elegantly," he wrote.

In contrast, Sax believes that VSIP is strongly promoting component makers. In addition, he observed that Microsoft is ramping up its support of the community by thinking about third parties in the design of its frameworks and products, and that the Microsoft sales force has an increasing awareness of component makers, as shown by a rise in the level of co-marketing.

"Several component vendors are some of Microsoft's strongest partners, and components get lots of visibility on the partner CD, [on] MSDN, through the Visual Studio gallery. Most importantly, Microsoft's support for component vendors has been consistently strong in the last few years, and it's clear that it is here to stay," said Sax. ■

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Office Open XML gets ISO approval after struggle

◀ continued from page 10

As first reported by The Wall Street Journal, Microsoft's multiyear lobbying effort has also spawned an investigation by European Union anti-trust regulators. The EU has taken inter-

est in Microsoft's activities to promote OOXML and whether those efforts were legal.

Guy Creese, vice president and research director for Collaboration and Content Strategies at Burton Group, said that

Microsoft may have won a pyrrhic victory—it gained the seal of approval from the ISO, along with a “huge reservoir of hard feelings” from OOXML's opponents.

Pieter Hintjens, of the

European Software Market Association, a non-profit organization dedicated to patent reform, said in a prepared statement, “Nobody wants standards you can buy. Microsoft bought a standard at

ECMA. Now they bought ISO. Who wants this?”

Microsoft's Robertson acknowledged the acrimony, saying the company has a “strong desire” to move ahead now that the ISO process is closed. He added that the company is focused on its document interoperability initiative to establish “high-quality” interoperability between document formats.

According to Robertson, Microsoft will devote the coming months to engaging developers to discuss and test implementations of OOXML with emphasis on what has changed over the past year as a result of the standards process.

Robertson said that the ISO process has resulted in a better standard.

Microsoft will also work to identify what gaps exist between OOXML and other formats. To that end, the company will develop a standard library of documents to test against and create templates optimized for interoperability between Open Document Format (ODF) and OOXML.

Longer term, Microsoft is developing interoperability test suites for each document format. Robertson would not commit to a timetable for the test suites' release; he gave a circumlocutory reply that the “community” has to make that decision.

ERA OF COLLABORATION

“Developers should jump in with both feet in efforts to create a new era of collaboration between implementers of Open XML and other formats to address interoperability issues. We will deliver higher-quality interoperability,” said Robertson.

He concluded that the presence of multiple document formats was good for the industry, with each format having its own characteristics that meet different needs in the marketplace.

“There are use case scenarios where OOXML is the clear choice, and others where ODF is fine. At the end of the day, it's about the technologies that implement that format, and we are developing a broad ecosystem around Open XML,” he pointed out.

Burton Group's Creese said that many enterprises were already likely to adopt OOXML by default, and ISO approval just makes it an easier sale. ■

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Gap narrowing for single, multicore

Optimized software use on the rise

BY ROBERT MULLINS

The embedded software industry is beginning to close the gap between the capabilities of applications written for a single-core processor world and the growing demand for those applications to take advantage of multicore platforms, according to figures released last month at an industry conference in Santa Clara.

But the gap between multicore processors and optimized software remains, and the hurdles—the burden of legacy code, insufficient programmer skills and the lack of industry standards—remain high, particularly in embedded.

The Multicore Association, host of the three-day Multicore Expo conference in Santa Clara, is forming a working group to address the problem of software applications that need to be written, or in many cases rewritten, to get the best performance out of the growing array of multicore processors coming to market. Intel and Microsoft are also supporting new research centers

at the University of Illinois at Champaign-Urbana and the University of California, Berkeley, promote parallel computing advances that match software capability to multicore processing.

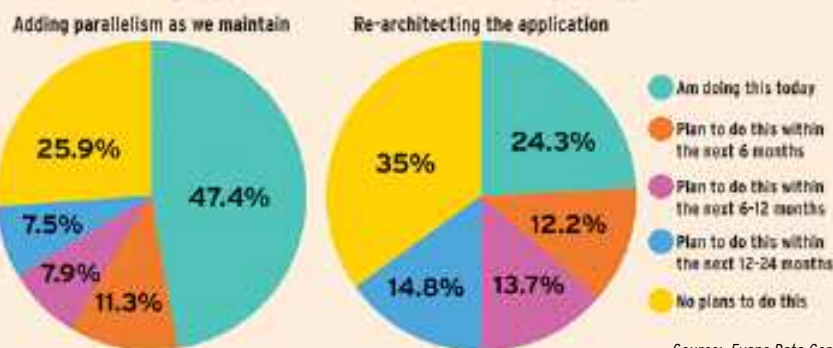
The software industry is changing, but slowly, said Eric Heikkila, director of the embedded hardware practice at the research firm VDC. Though only 6% of software vendors surveyed offered multicore-optimized software in 2007, that

continued on page 28 ►

BUILD A NEW HOUSE OR REMODEL?

While researchers search for a new way to write multicore applications, companies are struggling with whether to adapt legacy applications for multicore or incorporate them only into new applications. To gauge all that decision-making, Evans Data Corp. surveyed 385 developers last year and posed the following question:

What are your plans regarding adding parallelism as you maintain existing applications versus re-architecting the application?



Communications API to ease push into embedded

BY ROBERT MULLINS

To hasten the development of multicore software applications for embedded systems, an industry group recently said it expects soon to release a communications API for multicore processors.

The Multicore Association, which hosted a conference last month in Santa Clara, said version 1.0 of the Multicore Communications API (MCAP) was scheduled for release late last month,

after press time. MCAP is targeted at closely distributed embedded systems and can scale to support hundreds of processor cores, the association said. It is intended for systems with tight memory constraints and task execution times that require a reliable on-chip interconnection and high system throughput in applications that include multimedia, networking and automotive.

A working group of association mem-

bers, including chip vendors, software makers and tool providers, has been developing the API the past two years, said Marcus Levy, president of the Multicore Association.

"It's basically a design for intercore communications through a message-passing protocol," Levy said. "It's really low latency and lightweight, and we modeled it after other communications APIs."

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'We don't know what we should be teaching'

Academia seeks industry's input on secrets to parallel computing

BY ROBERT MULLINS

At least one computer scientist has known about the need for parallel computing for decades, and he expressed surprise that the gap persists between processor and software capability.

"I wake up almost every day shocked that the hardware industry has bet its future that we will finally solve one of the hardest problems computer science has ever faced, which is figuring out how to make it easy to write parallel programs that run correctly," said David Patterson, professor of computer sciences at the University of California at Berkeley.

Today, industry and academia realize that gap remains an obstacle to optimizing the capabilities of the growing numbers of multicore processors in servers, computers and embedded in everything from TV set-top boxes to network routers.

Both groups are working on solutions with long-term approaches, as well as quick-and-dirty ones. In the short term, they are offering ways to "infuse," as an AMD executive put it, parallelism capability into code written for uncore processors. But, in the long term, industry sources said, there needs to be a way to write code for parallel computing,



especially for new software applications, rather than legacy software.

Schools like Berkeley are focusing their research on that while looking for a lead from industry.

"We don't even know for sure what we should be teaching," said Patterson, "but we know we should be changing what we're teaching."

Development of parallel computing curriculum has been "scattershot and not [done] in a serious and systematic way," added Maurice Herlihy, a professor of computer science at Brown University in Providence, R.I.

Berkeley, though, has new resources with which to advance parallel comput-

ing. With the University of Illinois at Urbana-Champaign, it will share US\$20 million from Intel and Microsoft to fund Universal Parallel Computing Research Centers (UPCRC), one at each campus, over the next five years.

At Berkeley, the funds will augment research already done by the school's Parallel Computing Laboratory and enable the university to hire 50 researchers, 40 of them graduate students, to dig into the problem, said Patterson, who also serves as director of Cal's UPCRC.

While Berkeley's faculty will research new ways to write software for parallelism, it knows it has to begin teaching

undergraduate students something about what will likely be the future of software development, he said.

Berkeley has begun teaching its freshmen an introduction to parallel computing based on what Patterson called the "map-reduce" method, or data level parallelism. In map-reduce, he explained, programming is done in two phases. First, you map a function that operates on millions of bits of data stored on hundreds of computers, such as adding numbers up. You end up with sums of the numbers on each computer. In the second phase, you reduce the hundreds of sums on each computer into a single sum. "This is a simple parallelism, and we think that is something you can teach," he said.

Patterson added that upperclassmen are being taught to confront some of the "sticky issues" of parallelism, such as synchronization and load balancing. Things can get sticky, he added, given that parallelism is not simply dividing up software instructions equally between four or eight cores, like a supermarket opening more checkout stands for the evening rush. Patterson compared paral-

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Gap shrinks in multicore arena

◀ continued from page 26

number is expected to grow to 40% by 2011, Heikkila said at the conference.

"The industry has always been able to overcome technical challenges, and it's extreme-

ly likely that multicore [challenges] will be overcome as well," he told his audience.

Demand for multicore processor-based products will force them to catch up, Heikkila continued, as sales of multi-

core products are forecast to hit US\$2.47 billion by 2011, from \$372 million in 2007.

Multicore software growth is constrained by the amount of legacy code already used in many embedded applications.

A VDC survey of enterprises showed that 88% of the embedded software they're running on multicore processors is written in C or C++, which may be difficult to convert to multicore.

"I've had customers say, 'I

have this code base that's been running for 16 years uninterrupted and it's a nuclear power plant control system. I really would like to take advantage of multicore, but I don't really want to touch that code,'" explained Doug Davis, vice president and general manager of the embedded group at Intel.

Competition among vendors is also hampering agreement on industry standards, Markus Levy, president of the Multicore Association, said. "There are still a lot of companies who have their own proprietary products and want to keep it proprietary. It's difficult to get them to admit that standards are inevitable."

But the future of multicore is brighter in writing new applications than in rewriting old ones, said Wen-mei Hwu, a University of Illinois professor speaking at the conference.

"The opportunities of many cores are in new revolutionary applications," Hwu said. ■

COMMUNICATIONS API FOR EMBEDDED

◀ continued from page 26

PolyCore Software, an association member, expects to release the first commercially available version of MCAPI, said CEO Sven Brehmer, who also chaired the MCAPI working group.

Much of the discussion at the Multicore Expo centered on how software developers can write applications to take advantage of the performance capabilities of multicore chips. Applications written for single-core processors can inhibit the performance of multicores, but rewriting those apps can be difficult.

"I think it's a learning curve our industry is going through," said Tomas Evensen, CTO of Wind River, a maker of embedded device optimization software. "The first mistake [programmers] may make is to think multicore is not too much different from uncore, and then they go ahead but later find themselves in a deep hole."

Single-core applications need to be modified or rewritten to allow parallelism—the ability of the application to execute multiple tasks simultaneously using different cores. For years, chip-makers have speeded performance of single-core chips by raising frequency or clock speed. But those gains have hit the point of diminishing returns. ■

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Wanted: parallel computing answers

◀ continued from page 27

lel computing to conducting a symphony. Instruments like the flute, cello, harp or tympani each have different roles to play, and some play different notes than others. It's only when they work together with a conductor that they perform Beethoven.

"If they can do it right, they can make beautiful music. But if they don't do it right, it can be a big mess," he said.

Patterson did not discount the possibility that the ultimate solution to parallel computing is to create a whole new language: "This is such an important problem that nothing is ruled out."

Others, though, shudder at that possibility. In embedded software, for instance, C++ predominates as the language of choice and is written for uncore processors, noted Eric Heikkila, director of the embedded hardware practice at the research firm VDC, during a presentation last month at the Multicore Expo in Santa Clara.

"A true parallel programming language would take 15 to 20 years to become ubiquitous. Kids have to be learning the language in college and then using it throughout the industry," Heikkila said.

More likely than the emergence of a new language is the potential for existing languages to evolve parallel programming features, said Brown University's Herlihy. In March, he and a co-author published what is one of the first textbooks on multicore programming.

"I don't think we need a new language. What we need is more of an incremental movement," he said.

That's why interim solutions are needed to revise legacy software written for uncore processors, as well as software in development, said Margaret Lewis, director of commercial solutions and software strategy at multicore chip maker AMD.

AMD supports academic efforts at schools such as Stanford University in Palo Alto, Calif., and partnerships with companies such as Microsoft, said Lewis, but also has developed ways to introduce parallelism in code today.

AMD offers a code library with "routines" that can be

infused into existing single-threaded code to add "a nice level of parallelism," she said.

In February, the company released its AMD Performance Library code to the open-


source Framewave project community, in a move it called a commitment to the further development of parallelism.

AMD also is trying to infuse parallel coding techniques


through compilers and code analyzers, Lewis said, but admitted that with these interim steps, "programmers aren't getting the full benefits of parallelism ... but it runs better in

a multicore environment."

Adding to the argument for incrementalism, she also said that even as parallelism spreads, some applications would still not be suited for multicore processing. Her analogy: "You can't have nine women be pregnant one month each and produce a baby." ■


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Google launches free App Engine hosting service

◀ continued from page 1
application, Google said.

Users will be able to register only three applications apiece and will be able to buy additional network capacity

“eventually,” Google added.

The primary components consist of Google’s BigTable database and GFS (Google File System) data storage services, running on a Python

application server. Developers may also use Google’s broader library of APIs for account authentication, GData for reading and writing data on the Web, Gmail e-mail service,

and the URL Fetch API, which provides HTTP access to other Google services.

App Engine will host applications in a Python 2.5.2 runtime environment, according

to Google’s project manager, Pete Koomen, who added that the company might support other programming languages and runtime environments in future releases.

In addition, App Engine offers a downloadable software development kit, which includes a Web server application that emulates App Engine services on a developer’s computer.

Some libraries that support writing to disk and modules that are written in C are disabled on Google’s system, added Koomen. Python application frameworks, including Django, are supported.

THE COMPETITION

The launch of Google App Engine is expected to compete against Amazon’s EC2 (Elastic Compute Cloud) application hosting service and Salesforce’s AppExchange. Both of those services aim to deliver software applications over the Internet, and App Engine works from similar strengths, said Burton Group analyst Guy Creese.

“It’s a great alternative for folks that are headed in that [cloud computing] direction,” he said. “You write code and get the logistics with it.”

Google said that App Engine will allow developers to do several things: launch their applications without the hassle of configuring servers or storage; scale quickly if demand picks up by leveraging Google’s massive infrastructure; and integrate their applications with existing Google applications, such as Gmail or Google Maps, without having to build those parts of the application themselves.

App Engine’s initial software development kit is generally available for Linux, Macintosh and Windows users, but Google has restricted access to the App Engine servers to the first 10,000 applicants. The company said that it will broaden access during the near future. Applications will be hosted under the appspot.com domain.

Google has not disclosed its paid service tiers, but Koomen said that it would be competitive with other offerings on the market. ■



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Salesforce for Google Apps would boost SaaS model

◀ continued from page 1

customers can focus on building their core business rather than the applications that support it."

The deal makes SaaS a more attractive alternative to the traditional license model for software, said Jeffrey Kaplan, managing director of the research firm ThinkStrategies. Moreover, buyers of SaaS, who are seeing a "gold rush" of SaaS vendors emerging, might be more confident purchasing from major players such as Salesforce and Google.

"Some IT customers are becoming a bit apprehensive about having to buy their SaaS apps from too many sources," said Kaplan, "so the winners are going to be the more prominent players who have the strongest platform or the broadest portfolio of service."

Among the integrated applications are: Salesforce and Gmail for tracking e-mails; Salesforce and Google Docs for real-time collaboration by multiple users on the same document; Salesforce and Google Talk for instant messaging; and Salesforce and Google Calendar, for scheduling meetings and events and viewing the calendars of others being brought in on a project.

CUSTOMER CLOUD?

The partnership was spurred partly by customer comments on Salesforce's Ideas Exchange, its community forum, said Clarence So, chief marketing officer of Salesforce. "They said, 'We love working together with these products, [so] let's just put it all in one place.'"

Currently, Salesforce for Google Apps will be available to Salesforce customers free, while a paid support service plan for the program, at US\$10

per user per month, is expected to be available this summer.

News of the partnership has fueled speculation that the next step could be Google's outright acquisition of Sales-

force, which has also been the subject of conjecture involving Oracle or Microsoft as the purchaser.

ThinkStrategies' Kaplan said that he has no inside knowledge

of any imminent deal but added, "I don't think it's going to happen anytime soon."

He has not ruled out the possibility that Oracle would bid for Salesforce to shore up

Oracle's burgeoning SaaS business. But he added, "If that were to come about, it would be Google that would be the white knight that would come in to try to rescue Salesforce." ■

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Yahoo eyes alternatives to Microsoft

◀ continued from page 1

engine market, compared with 17.7% in December.

By comparison, Google, the market leader, was shown to have a 58.7% share in March,

and Microsoft's MSN and Live Web properties held 11.2%.

DeMichillie said that Microsoft appears convinced it is so far behind Google in the search market that it must buy

its way into second place.

For its part, Yahoo's board has rejected Microsoft's assessment. Its position remains that any transaction must fully reflect the value of Yahoo,

including any strategic benefits to Microsoft that would provide certainty to Yahoo's shareholders.

The board's reply cited Yahoo's free cash flow and earn-

ings potential, recent investments in advertising platforms and future growth prospects, strong global brand and large worldwide audience, and its unconsolidated—or off-the-balance sheet—investments as factors in its decision.

But Ballmer raised a new talking point, faulting Yahoo for adopting plans that have made any change of control more costly. In recent months, Yahoo has introduced the Amp advertising management platform as well as several mobile product offerings.

He wrote, "We believe that the majority of your shareholders share this assessment, even after reviewing your public disclosures relating to your future prospects." Ballmer's letter ended with an indictment of Yahoo's board for failing to give due consideration to a transaction that, according to him, has "tremendous benefits" for Yahoo's employees and shareholders.

Yahoo's first-quarter 2008 results are due out May 8. Laura DiDio, a senior analyst with Yankee Group, said that Microsoft will have no other option than to raise its bid if those results are strong. "If they are weak, or so-so, then it's game-set-match Microsoft," she said, adding that the present economic conditions may work against Yahoo.

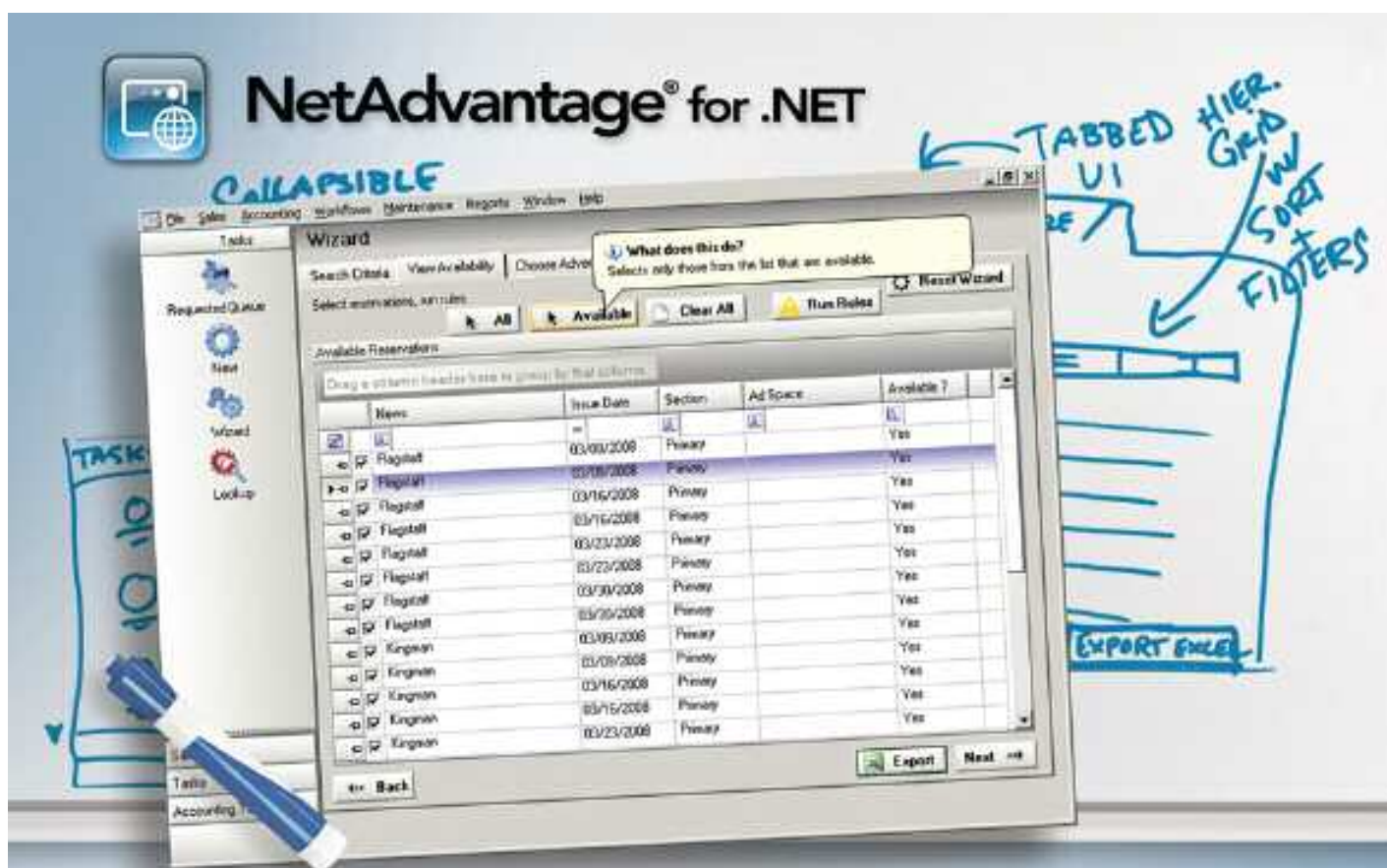
YAHOO UNDERVALUED?

Yahoo's board indicated that although it is not opposed to a deal with Microsoft, it was still exploring strategic alternatives, saying that a "significant portion" of the company's shareholders agrees that Microsoft's proposal undervalues Yahoo.

The board also noted that the value of Microsoft's proposal might have eroded some because of a fall in Microsoft's stock price, which was \$31.91 on Jan. 31.

DiDio said that the board's willingness to entertain a deal with Microsoft demonstrates that Ballmer's pressure tactics are working. He "holds the upper hand in terms of being in a stronger position than Yahoo's current board of directors. Yahoo is not averse to Microsoft's taking it over; it just wants better terms," she observed.

Nonetheless, a deal with



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Data Resolution has experienced a significant return on their investment, also utilizing NetAdvantage AppStylist® for each project. But the real bottom line for Data Resolution is how it helps them maintain a high level of service for their customers. "The Infragistics tools do everything our customers want," said Mindte. "When our customers see all the feature-rich code we built for them using NetAdvantage, they love us."



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Microsoft may not be Yahoo's only option. On April 9, Yahoo served up Google AdSense ads alongside its own search results, amid rumors that its board was entering into negotiations with AOL.

Yahoo explained that it was conducting a limited test of Google's AdSense technology. The test applied only to traffic from Yahoo.com in the United States and lasted for about two weeks, according to the company.

When asked about AOL's involvement, AOL senior vice president of corporate communications Anne Bentley told SD Times that the company had no comment.

News Corp., owner of MySpace, is contemplating an alliance with Microsoft in its bid for Yahoo in hopes of creating a more formidable rival to Google, according to the Associated Press.

A research note published April 10 from UBS analysts Heather Bellini, Abhey Lamba, Michael C. Morris and Benjamin Schachter argued that Yahoo's management would have a difficult time convincing shareholders that a deal with AOL is worth more than Microsoft's offer and that repurchased shares priced higher than \$35 per share would likely lose ground after the buyback.

The analysts noted that a Yahoo deal with AOL would include outsourcing the company's search capabilities to Google, in stark contrast to the strategy of Yahoo management, which combines search with display.

UBS's analysts concluded that a joint bid with News Corp. would make sense only if

Microsoft was seeking a financing partner, which analysts do not believe Microsoft needs. Such an arrangement would increase the integration risk and may outweigh the lower

financial risk, they noted.

Ultimately, the analysts think Microsoft will prevail. "We continue to believe reaching a mutual agreement with Microsoft would be the best

way for Yahoo to potentially extract a higher Microsoft bid (likely \$32 to \$35)," said the UBS research note. "The alternative would be for Yahoo shareholders to tender, al-

though this process would not be as expeditious as if the two sides were to come to terms and could involve a lower offer price, making the battle potentially even more protracted." ■

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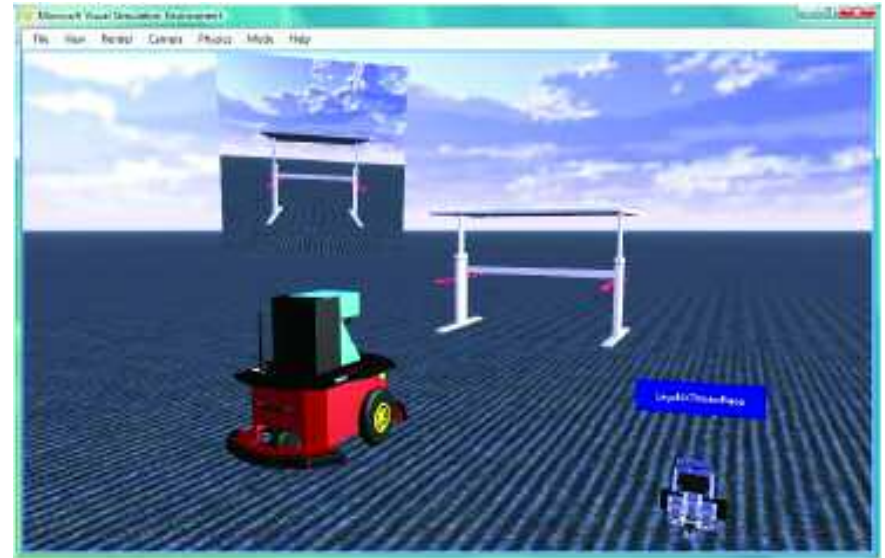
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The Visual Simulation Environment of Robotics Developer Studio 2008 can record position and orientation, and can play back stored activity files. The simulator now permits 2D labels.

Microsoft unveils next Robotics Studio version

BY P.J. CONNOLLY

Microsoft's efforts in developing tools for robotics took another step forward recently, when the company released a preview of the next version of its programming platform.

Robotics Developer Studio 2008 builds on the original release, Robotics Studio 2006, according to Microsoft robotics group general manager Tandy Trower, and is due for release later this year. The company made a community technology preview of Robotics Developer Studio available for download on April 9. The name change lines up with existing product lines and better reflects its role as a development tool, the announcement noted.

The updated developer tools now allow the use of distributed LINQ queries to reduce network utilization and simplify service authoring. Runtime performance has also seen a boost, according to Trower, with the company estimating interservice throughput gains of 150% to 300%, between nodes as well

as within nodes. According to the company, services now load twice as fast as they had.

The tools themselves have seen other work as well. The Visual Programming Language tool now allows users to visually define computational domains for managing distributed program execution. Meanwhile, the simulation environment tool now can record and play back simulations, and its floorplan editor simplifies the definition of complex interiors and building structures.

Since the launch of Robotics Studio 2006, more than 200,000 copies of the software have now been downloaded, according to Microsoft. The software is free for noncommercial applications but must be licensed for commercial use.

The company also announced a virtual robotics competition, called RoboChamps, which was expected to launch April 21; details are available at www.robochamps.com. ■

EXPRESSLOGIC VISION WIDENS

BY P.J. CONNOLLY

ExpressLogic isn't leaving the real-time operating systems market, but the company is seizing an opportunity by releasing an Eclipse-based IDE it calls "RTOS-agnostic."

BenchX, meant to be a comprehensive IDE for embedded systems, is based on the Eclipse Europa version of the C/C++ Development Toolkit.

Although the company expects to offer BenchX for most 32-bit architectures, the initial release works with ARM, ColdFire, MIPS and Power Architecture processors.

Besides the IDE, BenchX includes a wizard-driven project builder, a language-sensitive editor and code browser, GNU compiling and debugging tools, a simulator of target instruction sets, and a hardware probe.

Company executives characterized the new release as "a huge step forward," and president William Lamie pointed out in the announcement that BenchX was designed as an "affordable" toolset.

Licenses begin at US\$1,000 per seat, which includes three months of technical support. ■

Aonix refreshes VM platforms for real-time

BY P.J. CONNOLLY

Virtualization is everywhere, but nowhere may it have more of an impact than it does on embedded systems. Recognizing that, Aonix in recent weeks has beefed up both Perc Pico, its VM platform for hard real-time operating systems, and Perc Ultra, a VM platform for "soft" or general-purpose real-time applications requiring Java SE support.

Aonix released Perc Ultra 5.1 last month, adding support for a number of platforms, including Green Hills Software's Integrity, Mentor Graphics' Nucleus, Sysgo PikeOS and Wind River Linux. The company's list of supported RTOSes already included offerings from LynuxWorks, MontaVista and QNX.

Perc Ultra 5.1 includes several enhancements to security—such as support for Java's secure socket and cryptography extensions—that upgrade all security packages to Java 5.0 compatibility, the company said.

The update to Perc Ultra also includes an overhauled interface with Perc Pico, to address both the hard and the soft real-time behavior. Perc Ultra now can go to the lowest levels of the

hardware platform in pure Java, according to the company, eliminating cumbersome exchanges between C and JNI, the Java Native Interface. That handoff is considered a common point of failure in mixed-language embedded Java applications, the announcement noted.

Early last month, Aonix announced that Perc Pico 1.1, which launched at the end of February, was now supported for Wind River System's VxWorks on Power Architecture, in addition to Linux and Windows on x86 hardware. Perc Pico can also be used with the Wind River Workbench development suite. The company's plans for Pico, which is based on the emerging JSR-302 specification for safety-critical applications, are to make it available for other commercial RTOSes, but no roadmap has been disclosed.

Perc development tools are available without cost when combined with a maintenance contract. Perc Ultra is also available at a discount when bundled with Perc Pico, and license costs for target execution and deployment depend on the projected volume, and they begin at US\$25,000. ■

Eclipse DSDP gets a boost

Three new projects and another initiative aim at embedded and mobile developers

BY P.J. CONNOLLY

The Eclipse Foundation's been working on open-source technologies for embedded and mobile developers for a while, and it expects four new initiatives to advance the state of the art.

They take the form of three projects announced April 15, and the addition of Windows CE capabilities to an existing effort, as part of work on the Eclipse Device Software Development Platform, or DSDP. These join nine other projects aimed at addressing the needs of embedded systems developers.

First, the Target Management project now works more closely than before with Microsoft's Windows Embedded CE, allowing developers to access devices through the Eclipse IDE to remotely edit, update and delete files in the course of creating a Windows CE application.

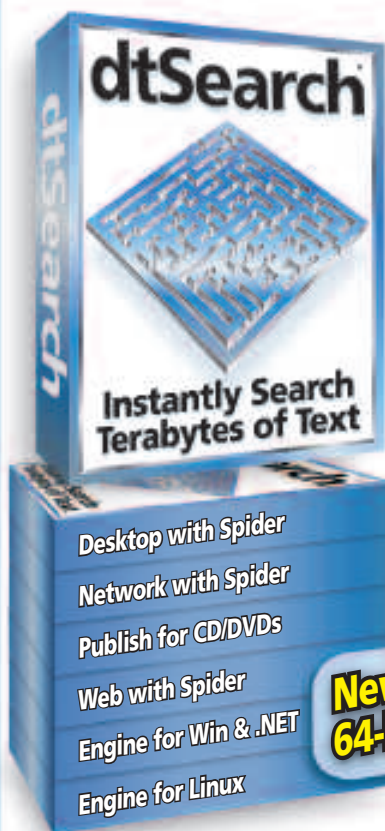
The Device Debugging project is due for its initial release in June as part of Eclipse's Ganymede release train. At its heart is the Debugger Services Framework, which is extensible by design, allowing commercial toolmakers to cre-

ate advanced debugger integrations. The framework includes a reference implementation by Ericsson that supports debugging by way of the GDB debug engine.

Another project, Real-Time Software Components, is led by Texas Instruments, and will concentrate on building tools to work with highly resource-constrained devices, including digital signal processors and microcontrollers. This project includes a C-based programming model for building applications with C and C++ to run on various systems.

The last initiative, the Target Communications Framework, is making use of contributions from organizations including Freescale, Power.org and WindRiver to create a lightweight yet extensible protocol to standardize communication between developer tools and devices themselves. JTAG probes, target agents and target simulators are all expected to benefit from TCF, with the hope that it will make it easier to combine components from multiple vendors in multicore and system-on-a-chip designs. ■

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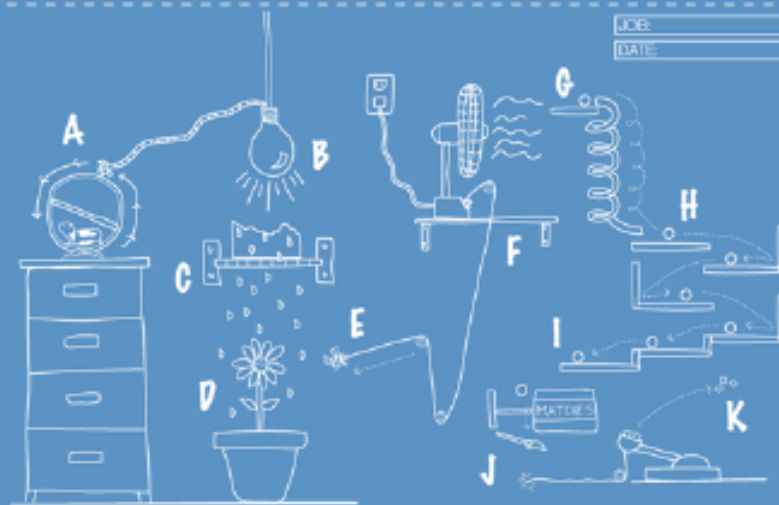
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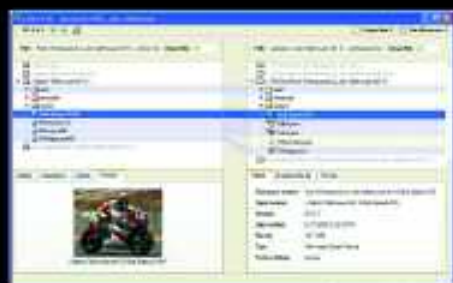
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Folder Diff is just one of the many productivity tools that come with the Perforce SCM System.

Open-source successes teach enterprise lessons

Disruptive? Sure, but paradigm shift boosts quality—and morale

BY TINA GASPERSON

Have you ever heard the phrase “subvert the dominant paradigm”? It instructs: Upset the apple cart of traditional thinking every chance you get. Indeed, paradigm subversion assumes there’s always something better hidden on the other side of tradition.

However, paradigm shifts don’t come easily. For example, when Einstein’s theory of relativity came face to face with Newton’s gravitational theory, Einstein was flatly dismissed. But, as more scientists investigated relativity and discovered its soundness, Newton’s dominant paradigm was subverted and replaced by Einstein’s superior theory. These days, open-source development is sometimes seen as subversive, but the process doesn’t upset apple carts for the sheer fun of it, say proponents. It really is a better way to create software.

“Open-source software presents the richest example of the changes under way in the structure of our economic institutions,” say Richard Gabriel and Ron Goldman in their book “Innovation Happens Elsewhere.” The authors assert that the open-source development community is “pioneering the changes arising in our society from the transformation from industrial to informational economy.”

Today, more and more enterprise software development managers are taking a closer look at how open-source projects are run and discovering what many developers have known all along: The kind of disruption that open-source methodology creates is good for company morale and production. It produces much higher-quality software that is more

secure, flexible, scalable and bug-free than software developed under the old paradigm.

For a long time, the dominant paradigm in enterprise software development has been the silo method, or what Eric Raymond calls “the cathedral.” It compartmentalizes different projects or teams in ways that discourage or prevent interaction at a meaningful level. Sometimes, even different job functions within the same development project are walled off from one another, with stages of development forced to progress in a strictly linear fashion from silo to silo.

Requirements analysis is separate from documentation, from engineering, from testing—and the strand of communication between these silos is never broad enough. This results in a sluggish response to feature requests or performance complaints. Even more entrenched is the notion that the individual project itself is a silo, wholly separate from the other company departments, which often are the intended end users of the software. And when the final product is a commercial application, there is even more separation between the project and the end users.

GOODBYE TO SILOS

Open-source software development eliminates the barriers of the silo method, both inside the project and between the project and the users. In fact, in many ways, the users become part of the project, as integral to the process as the coders themselves, because the users test prerelease versions, report bugs, request features, evaluate upgrades and even write documentation.

The hierarchical distinctions become fuzzier still when the developer is also the end user—a common

circumstance in open-source projects. The silos are deconstructed and the project is a hive of activity, or in Raymond’s terms, a “bazaar.” Everyone, even non-coders, contributes to the discussion, and all become part of a development community where there is still a definite process. But that process is much more flexible, democratic and, of course, open.

According to Gabriel and Goldman, sharing code inside a company is even easier than doing it in the wider world. After all, no licensing is required. Simply upload the code to the company file server and you’re done. Or are you? “It may take a very big shift in mind-set to open up a project’s code to developers in other parts of the company,” they write. “In fact, one of the biggest benefits might be increased communication between different parts of the company.”

BIG CHANGE IS SOCIAL

This communication boost can produce benefits that far outweigh the mind-set and management adjustments that often must precede the implementation of open-source development methodologies. To make a transition from silos to hives, or from cathedrals to

continued on page 38 ▶



Open-source successes are lessons

◀ continued from page 37

bazaars, managers must realize that this is much more a social paradigm shift than a technical one. Successful implementation will require leadership in embracing open-source philosophy and casting an open-source vision. Fortunately, enough a priori evidence exists to ease the job of convincing higher-ups that bazaar methodology is a good thing.

For example, and as Gabriel and Goldman note in their book, Hewlett-Packard has realized the benefits of internal open-source development. In its paper "Progressive Open Source," by Jamie Dinkelacker, Pankaj K. Garg, Rob Miller and Dean Nelson, HP said that adoption of open-source methods addresses, and sometimes eliminates, corporate software development challenges resulting from departmental silos in huge companies, even those with tens of thousands of employees.

Challenges such as project launch difficulties, divergent coding standards, company reorganizations that see developers suddenly moved from one project to another, or timelines for existing projects squeezed to force completion by a new deadline are not merely the province of companies that sell software, HP asserts. They also exist in large organizations that develop applications for internal use.

One of the most ubiquitous open-source software development tools is the code repository, or version-control tracker. Closed-source projects use version control too, but again, those are silos that prevent access by concurrent or subsequent project groups and teams.

Corporations that remove silo boundaries by implementing a central code repository open to the entire organization find it is easier to launch projects quickly because no one has to reinvent the wheel. Over time, the underlying code becomes more stable and reliable because improvements are not discarded after a single use. Rather, they are "checked in" to the repository and reused, which further shortens time-to-market. Meanwhile, developers become familiar with the code tree and, therefore, take less time to readjust to new projects when department changes and role reassignments become necessary.

CATCH THOSE BUGS

On the testing side, bugs become easier to find and fix because more people look at the code. Open-source projects usually have an official means of communication: a mailing list or a wiki, or both. Large companies can easily implement these tools in addition to a code repository, allowing discussion and tracking of

the project by all interested and affected employees.

With version-control software such as Concurrent Versions System or Subversion, users can work on files simultaneously, check the code back in to the version-control software, and the changes are merged overnight. That way, everyone working on the project is on the same page with the most recent updated version of the code. With an open development process, even testers and documentation writers will access and update the repository with their contributions to the project.

While some challenges are easily reduced and others are eliminated by adopting an open-source development process and using relevant tools, additional challenges frequently surface as a result of open-source methodologies. To a software development manager with no background in open source, the idea of an open and participatory process may sound scary, though intriguing. It's easy to see how to maintain control of a project in the silo method, but overseeing the process is less clear in the community approach, where images of herding cats come to mind.

One of the biggest hurdles is the political and hierarchical infrastructure that exists in every corporation. Managers who are used to feathering their nests and

plumping their resumes with pet projects must get used to sharing their resources, developers, and even innovations with the new community. As that happens, there will still be a tendency for project participants to move within traditional and longstanding hierarchies, Gabriel and Goldman point out. Sometimes this is just habitual; other times, the company exerts pressure to keep doing things "the way we always have." One way to avoid that problem is to see that upper management and C-Level executives are completely sold on open source.

FINDING THE RIGHT DEVELOPER

As many companies have discovered, another challenge stems from the limited pool of developers available even within a large organization. In the broad world of open-source development, the best developer for the project at hand usually rises to the top. That's because with an almost limitless pool of coders, someone with the right combination of desire, ability and dedication will emerge.

Finding the right person to lead a development project inside the limited scope of a corporation is more difficult. And even if the right person can be found, it can be tough to retain that person if a better job offer surfaces. On the other hand, with silo elimination, more people in the company will understand the project and will be able to work together to fill in the gaps if the project leader needs to be replaced.

The more or less unstructured approach of open-source development can be a huge challenge for hierarchically driven corporations. Relying on the enthusiasm of project participants to keep a project on track may not be the best solution in a deadline-driven business environment. Fortunately, some tools have emerged to encourage best practices in an open environment.

The Apache group created a tool, called Maven, that provides a uniform build system for Java-based projects and generates change logs, dependency lists and unit test reports. Fluid is a project that aims to "help improve the usability and accessibility of community open-source projects." Tools like these make transitioning a company to an open development environment feel more secure. While weighing the challenges against the benefits is critical before undertaking a task of this magnitude, open-source development methods could usher in the productivity and quality increases that every project team seeks—whether the project itself is open source or not.

Technology writer Tina Gasperson focuses on enterprise applications of open-source software. Read her blog at www.gasperson.com.

Many eyeballs mean shallow bugs

Software testing and quality assurance is an art, and its practitioners are creative, curious and innovative. Their perfect studio? An open-source environment, because it attracts those who are gifted at figuring out how best to put an application through its paces: "Let's see what would happen if..."

At the same time, SQA is serious business. End users, whether outside or inside the company, need software that simply works. The community is no slouch either when it comes to producing code as fault-free as possible. The adage, "Given enough eyeballs, all bugs are shallow" (aka Linus' Law), was originally posited by Eric S. Raymond, the author of "The Cathedral and the Bazaar."

The vulnerability to attacks of open-source applications like the Apache Web server, compared with that of proprietary server applications, such as IIS, is debatable. But open-source proponents maintain that security flaws in open source get

found sooner and fixed more quickly, diminishing the number of vulnerabilities. The benefit of having many eyes looking at your code is that any failure is less likely to happen to your least suspecting user. Instead, you've got people who think it is fun to break stuff intentionally looking for the flaws, and when they're found, fix them immediately.

Open-source testing principles can be adopted by any company whose management is comfortable allowing employees devote a portion of their workday to testing software and reporting bugs and failures. Staffers within

the IT department can act as white hat hackers with access to prerelease and alpha code, while end users in other departments can beta-test and report bugs and other difficulties.

Brian Behlendorf, CEO of CollabNet, said that it helps to make it easy for employees to report bugs they find. This means establishing a framework ahead of time, like Mozilla's online feedback system, called Hendrix because of that rock guitarist's penchant for using sound system feedback as part of his music. Hendrix makes it easy for users to shoot off comments and suggestions, and the page links directly to the more formal bug-reporting mechanism.

Mozilla also offers Litmus, a Web-based open-source QA tool used internally but is also available for download and use by anyone running Apache, MySQL and Perl. Litmus makes it easier for casual users, who would never write a test case, to test software, though developers can also submit their own test cases. It also acts as a repository for test cases and results, with a specially designed interface that simplifies viewing and creating reports based on those results.

Sharing bugs and test results with the entire community is beneficial because users can save time by searching to see whether a bug has been reported. A good bug and test repository that allows Boolean key word searches would encourage testers to report their findings and reduce demands on tech support.

In Litmus, any user can browse and select active test runs in which to take part and then receive detailed step-by-step instructions and guidance. The results are automatically displayed to the community and the QA managers who designed the test. The potential for greatly enhanced testing and QA output, with far lower costs, is obvious.

—Tina Gasperson



FortiusOne® Chooses EnterpriseDB® Over MySQL®

Intelligent mapping solutions developer chose Postgres Plus Advanced Server because of its quick and efficient performance, PostgreSQL foundation, and enterprise-class features at an affordable cost.

FortiusOne provides next-generation intelligent mapping solutions that make the world's geographic data accessible to everyone for learning, decision-making, and problem-solving. The company is leading the way toward the next generation of the web with breakthrough SmartWeb technologies that offer unprecedented access to data, easy remixing of data for specific needs, and rich information visualization to grow collective knowledge.

FortiusOne developed GeoCommons, a popular destination website that enables anyone to explore, create, and share geographic data and intelligent maps. GeoCommons houses a large geospatial database with more than two billion attributes, 35,000 variables, and 1,500 datasets. As a fast-growing startup, FortiusOne required a low-cost, powerful database solution to run GeoCommons.

“EnterpriseDB occupies that crucial middle ground between MySQL and Oracle®. [It] is priced competitively with MySQL, but provides significantly better performance and advanced features you just don't find in most open source databases.”

- Chris Ingrassia, Chief Technology Officer, FortiusOne

Challenges with MySQL

Originally, FortiusOne selected MySQL; however, when FortiusOne was preparing to deploy the first public beta of GeoCommons, they encountered major performance roadblocks. MySQL's limited and incomplete spatial support dramatically impacted GeoCommons' performance. Additionally, MySQL was unable to deliver enterprise-class features and performance at an affordable price. Finally, FortiusOne preferred to support an open source-based technology.

An Enterprise-Class Solution Based on Postgres

The PostGIS spatial extensions to PostgreSQL played a key role in FortiusOne's selection of Postgres Plus Advanced Server and dramatically improved performance. Postgres Plus Advanced Server's PostgreSQL foundation guaranteed the reliability and stability that FortiusOne required, at a small fraction of the cost of traditional enterprise databases.

Overall System Performance Improves with EnterpriseDB

FortiusOne needed to run complex spatial queries against large datasets quickly and efficiently, and found the MySQL spatial extensions to be far less complete and comprehensive than PostGIS. Postgres Plus Advanced Server processes some of GeoCommons' database-intensive rendering requests in 1/30 of the time required by MySQL. During peak hours, GeoCommons processes more than 100,000 complex requests per hour, requiring the true enterprise-class performance and scalability delivered by EnterpriseDB.

Another major factor in FortiusOne's replacement of MySQL with Postgres Plus Advanced Server was the company's need for advanced partitioning, custom triggers, and functional indexing. Postgres Plus Advanced Server's advanced partitioning capabilities instantly enabled linear performance, even with tables

having billions of rows. Since migrating GeoCommons from MySQL to Postgres Plus Advanced Server, FortiusOne has improved overall system performance by 80%.

Quality Technical Support

EnterpriseDB offers round-the-clock, enterprise-class technical support. Customers receive rapid responses and helpful solutions from on-call developers, providing a compelling alternative to other enterprise databases.

What's Next?

FortiusOne is extremely pleased with the results it has received from EnterpriseDB and Postgres Plus Advanced Server. Open source software from EnterpriseDB has indeed provided FortiusOne with a solution to its business challenge: to run complex queries quickly and efficiently, at an affordable price. When considering database options for future products, EnterpriseDB will be at the top of FortiusOne's list.

FORTIUSONE



Since switching to EnterpriseDB, overall system performance has improved by 80%.

About EnterpriseDB

EnterpriseDB is the world's leading provider of enterprise-class products and services based on PostgreSQL, the world's most advanced open source database. The company's Postgres Plus products are lightning-fast, massively scalable, and extremely reliable, making them ideal for high-volume, mission-critical applications. EnterpriseDB has offices throughout North America, Europe, and Asia. The company was founded in 2004 and is headquartered in Edison, NJ.

For more information and to download Postgres Plus Advanced Server, visit www.enterprisedb.com

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CASE STUDY

Google ascends into cloud

To get a sense of Google's size, consider this: If you google "Google," you get 2.1 billion search results. Google "God," and you get merely 486 million. Now, Google wouldn't claim to be four times more popular than the Almighty, of course, but perhaps the company is moving into His lofty neighborhood: the cloud.

Recently, Google placed two big bets that computing is indeed moving up into the cloud. First, it is partnering with Salesforce to put its Google Apps portfolio onto Salesforce's SaaS platform. Second, it offers a preview release of App Engine, which will let software developers create applications and host them on Google's massive infrastructure.

BusinessWeek called this cloud strategy "Google's Next Dream" in a Dec. 24, 2007, cover story, showing that this capability affects far more than information technology departments. When executed properly, cloud computing saves enterprises the hassle of figuring out how many servers they need to provision, how much space they have or how much electricity they can afford.

While computing power as a service isn't a new notion, modern uber-companies such as Google are in the best position to be the computing infrastructure for others. Another big player is Amazon.com and its Elastic Compute Cloud (EC2) service. Salesforce.com also has its platform, The Force.

Just as important as being able to scale up computing resources as needed, an enterprise also must be able to scale down. This avoids the situation where different departments in an organization hoard servers or storage in case they need them, even though they haven't used such storage in months. In today's ultracompetitive economy, being able to scale down is one of cloud computing's most compelling boardroom arguments.

To be sure, some of those clouds look dark and threatening to others. Many organizations are rightfully skittish about yielding control over their computing resources to an outsider—any outsider. Google's vaunted "Don't be evil" pledge does not reassure skeptics, who are worried about how well Google, or any other cloud-computing provider, would safeguard their data.

Even so, enterprises trust their information to all sorts of people outside their walls—contractors and partners, for example—so the precedent is there for all but the most critical information. And even there, if cloud computing delivers convenience and value, then the market will embrace it, whether it's from Google, Amazon or anyone else.

Multicore's supporting cast gathers

The trouble with covering news is that one is so often focused on the freshest new thing out there that it's easy to forget that the rest of the world is catching up with fresh and new. We've covered the growth of multicore processor technology over the last few years, and having done so, we're glad to see that education and tooling are beginning to ride the multicore wave.

Anyone who thinks the challenges of programming for the new processing platforms are trivial is kidding himself, in no small part because the options are numerous, and it's going to take time to sort out what works and what doesn't. That it's only taking a couple of years for university computer science departments to catch on to the demand for multicore-specific education is a tribute to what is ordinarily a slow-moving beast.

Quite simply, not all code can or ought to take advantage of multicore technology. The trick will be to identify those parts of one's software portfolio that can achieve the most by a rewrite, what has to be rethought from the ground up, and what can be left alone. No consultant or coursework will be able to decide that for a business, and companies would be wise to ensure that their developers take advantage of today's advances in tooling, rather than wait for something better to come along. ■

Sloppy apps don't help cause

Not too long ago, the BBC introduced a new bit of software—the iPlayer, which is supposed to be the Beeb's next-generation media player. It's pretty slick and, from what I understand, quite popular. So popular, in fact, that British ISPs are complaining that the iPlayer "uses too much bandwidth."

I love hearing network providers who complain about this sort of thing, because I've heard so many of them promise absolute snake oil over the years. I remembered the executive who swore that his company would offer customers a handset-based 56Kbps data service by 2001 or 2002 "at the latest." Well, that didn't happen until Christmas 2005, according to my notes.

For rich Internet applications to succeed, they can't be created with the assumption, as so many are, that one has a LAN-grade Internet connection. Heck, for many mobile users, their link is the equivalent of a dial-up connection with speeds right out of 1994.

The simple fact is that the people who own the pipes are appalled at the idea that they might have to reinvest in equipment because of customer demand. I guess I really am quixotic in my belief that oligopolies, such as telecommunications, might even be worse than monopolies. At least with a monopoly, there's no illusion of choice.

If I took up tilting at windmills, my first target would be Web applications that don't behave well over the Web. My two leading offenders at this moment are a pair of popular applications on media sites. I'm referring to Flash and Print Article.

Adobe System's Flash makes sites such as YouTube possible, and without it, I know my day would be less joyful. But, then again, I like to see pandas sneeze.

The problem with Flash is that so many sites use it in ways that suck up my computer's time and resources even when I'm not interacting with the page.

On the other hand, Print Article is seemingly quite simple, but either an orphan or a bastard, depending on which newspaper's online edition I'm reading. Printing a hard copy is often an effort that only a collector of weird news clips could tolerate. In both cases, we don't know who's responsible for the ill-behaved so-and-so, and nobody seems interest-

ed in taking charge.

These two tools cause 90% of my Web-related stress. Most of the rest comes from wondering whether the plane ticket I'm about to buy will cost more or less than it would have an hour ago. But that's another discussion.

I don't know why the media seem to have so much trouble delivering Web content. Is it that their developers and IT staff are incompetent, or are they simply so focused on one part of a site that they don't care how people actually use their work?

The point of this rant is simple enough: If you're writing a Web application and don't test it over the "real" Internet, you might as well stay home. Even if that app sees widespread use, people will curse your name whether they know it or not. At least I will. ■

P.J. Connolly is executive editor of SD Times.

Connolly's Take



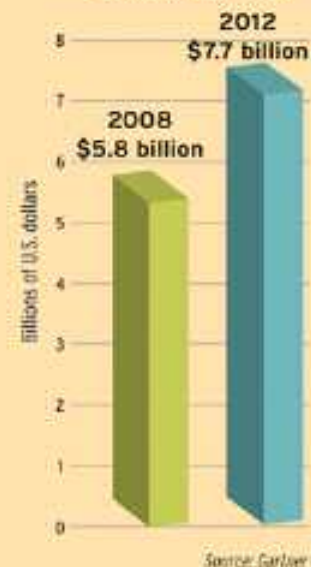
Business intelligence platforms, favored by CIOs, keep thriving

The market for business intelligence platforms will grow even during an economic slowdown, according to new research from Gartner. Having found that BI is currently the top priority of CIOs, the research firm expects BI budgets to expand, albeit the technology is becoming less expensive and easier to implement.

The worldwide revenue for BI platforms is forecast to grow by a little more than 11% between 2007 and 2008, and at a compound annual rate of 8.1% through 2012. Such growth would add almost \$2 billion to the projections for those years and raise the total value of the market to US\$7.7 billion, notes the Gartner report, titled "Forecast: Business Intelligence Platforms, Worldwide, 2007-2012." The report is available now. ■

DATA WATCH

Wider BI adoption seen even amid slowdown



The future of quality hinges on productivity

Managers push quality on developers the way parents push vegetables on their children. Given a choice, most kids won't touch a lump of spinach sitting on their dinner plate. But if you blended pureed spinach into the chocolate brownies for which they always reach, your children would get the intended nutrients without your ever having to utter, "Eat your vegetables."

During the past 20 years in the software industry, quality initiatives have come and gone, along with countless attempts to find a silver bullet tool that would deliver quality with the click of a button. Unfortunately, there is no silver bullet. Some ideas have worked in theory, but few have succeeded in practice.

The major problem is that when managers try to improve quality, they unintentionally pile more work on time-starved developers. Quality tasks are introduced in such a way that they require developers to adjust their tried-and-true work flow to take on additional work.

Not surprisingly, this usually isn't well received. If developers don't believe that learning and applying this new practice will be worth the effort, by relieving them of tedious tasks to allow them to focus on the creative work they enjoy, the practice eventually will decay. The developers probably won't reject the new initiative outright; they will simply do it less and less until they stop altogether.

We push these well-meaning quality initiatives without considering their effect on productivity. Quality increases productivity, we assume, but that's not the case. If you want to introduce a quality initiative, do it in a way that doesn't disrupt or slow the normal work flow. Otherwise, there's little chance of achieving a sustainable quality process.

A good work flow can make or break a quality initiative. For example, assume

that someone delivers a mandate: "All code must be peer-reviewed." If the development manager responsible for implementing the peer code review interprets that as meaning "no developer can check in code before it is reviewed," he is creating a tremendous roadblock in the developers' natural work flow. This is a prime example of a quality initiative that would hamper productivity.

This process is illustrated in figure 1:

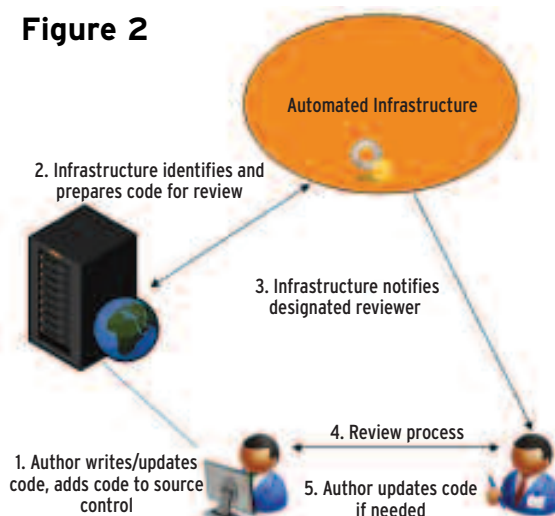
Now, the developer must do a lot of extra work before adding code to source control. Even with an automated infrastructure managing key tasks, the developer has to remember to initiate the process that identifies code ready for review and enter a description of the intended modifications.

Without an automated infrastructure, the developer also must identify the code that needs to be reviewed and organize it into logical packages. He has to distribute the review packages to the appropriate reviewer, notify the reviewer, and monitor the review status until closure—and perhaps even remind the reviewer of the pending review.

This is tedious and time-consuming work. As a result, developers will probably try to follow this process initially, and project progress will likely slow to a crawl as a result of the additional work and the new roadblock. Once developers realize that, reviews will become less frequent. Eventually, peer code reviews will be nothing more than a bad memory.

A better approach would be to interpret the mandate as, "I don't want to have unreviewed code in any applica-

Figure 2



tion when it goes to production," which would allow code review to occur after check-in. This means that code in the source control system will not be 100% reviewed all the time. Code will not be reviewed the minute it is checked in; it might take several days. But this is a small trade-off for the more productive work flow that results.

By implementing automation between the developer and his code check-in, the mandate becomes much less disruptive to development.

The more tasks that get automated, the better. The burden on the developer is reduced because he's not forced to perform additional work; He merely checks in the code as he normally would. The only added work for the team would be the actual peer review—a creative process that cannot, and should not, be automated.

This less disruptive process is illustrated in figure 2:

What's important is that this type of setup actually doesn't increase the amount of work, but rather it reduces it. How? Because the code review actually enables early error detection. That, in turn, reduces the length and difficulty of debugging, which typically consumes a tremendous amount of development resources.

The interesting thing here is that the greatest value is achieved by focusing on productivity, not quality. Focus on quality without considering productivity and you likely will end up with minimal to no quality improvements, some slipped schedules, and a disgruntled team. But focus on productivity by helping the team work smarter, and the team will deliver better software faster. ■

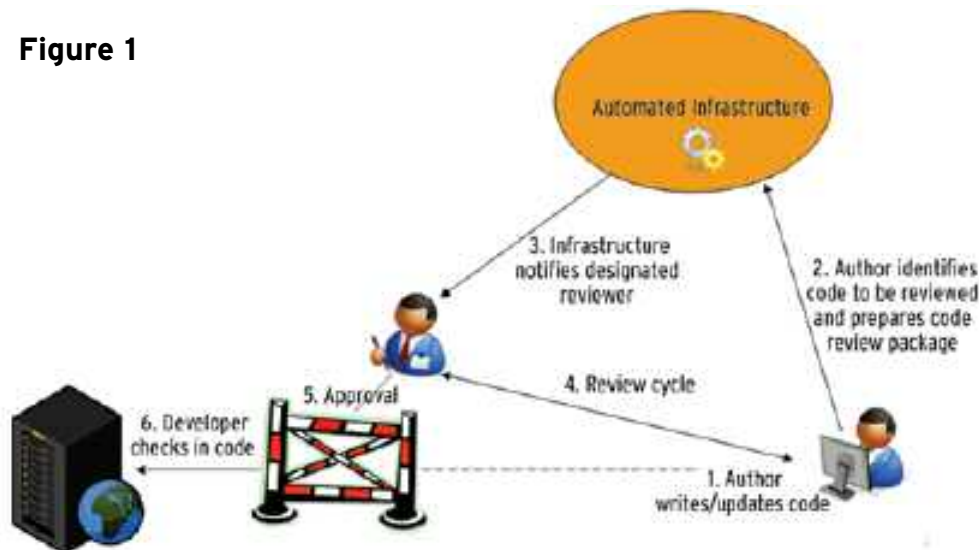
Adam Kolawa is the co-founder and chief executive officer of Parasoft, which sells software testing tools.

Adam Kolawa



Guest View

Figure 1



SDTimes
The Industry Newspaper for Software Development Managers

Software Development Times
Issue No. 197
May 1, 2008

Editorial

Editorial Director

Alan Zeichick
+1-650-359-4763
alan@bzmedia.com

Executive Editor

P.J. Connolly
pjconnolly@bzmedia.com

Managing Editor

Greg Lupion
glupion@bzmedia.com

Senior Editors

Jennifer deJong
jdejong@bzmedia.com

Robert Mullins
rmullins@bzmedia.com

Associate Editor

David Worthington
dworthington@bzmedia.com

Associate Copy Editor

Adam LoBelia
alobelias@bzmedia.com

Art Director

Erin Broadhurst

Columnists

Andrew Binstock
David S. Linthicum
Larry O'Brien

Contributing Writers

Mary Jo Foley
Geoff Koch
Alexandra Weber Morales
Lisa L. Morgan

Sales & Marketing

Publisher

Ted Bahr
+1-631-421-4158 x101
ted@bzmedia.com

Southwest U.S./Asia

Robin Nakamura
+1-408-445-8154
rnakamura@bzmedia.com

Northwest U.S./Canada

Paula F. Miller
+1-925-831-3803
pfmiller@bzmedia.com

Southeast U.S./Eastern Canada

Jonathan Sawyer
+1-603-924-4489
jsawyer@bzmedia.com

Middle Atlantic/Midwest

Daniel Gaiman
+1-631-421-4158 x114
dgaiman@bzmedia.com

New England/Europe

David Lyman
+1-978-465-2351
dlyman@bzmedia.com

Associate Publisher

David Lyman
+1-978-465-2351
dlyman@bzmedia.com

Advertising Traffic

Phyllis Oakes
+1-631-421-4158 x115
poakes@bzmedia.com

Director of Marketing

Marilyn Daly
+1-631-421-4158 x118
mdaly@bzmedia.com

List Services

Lisa Fiske
+1-631-479-2977
lfiske@bzmedia.com

Reprints

Lisa Abelson
+1-516-379-7097
labelson@bzmedia.com

Accounting

Viena Ludewig
+1-631-421-4158 x110
vludewig@bzmedia.com

Reader Service

Director of Circulation

Agnes Vanek
+1-631-443-4158
avanek@bzmedia.com

Customer Service/Subscriptions

+1-847-763-9692
sdtimes@halldata.com

BZ Media

President
Ted Bahr

Executive Vice President
Alan Zeichick

BZ Media LLC

7 High Street, Suite 407
Huntington, NY 11743
+1-631-421-4158
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Extending your SOA between enterprises

Not until the advent of Web services have we had a widely accepted standard and enabling technology that allows us to access all types of systems through a common services interface. In fact, we may be at a point where more is understood about the technology than the ways in which it fits into the enterprise or value chain. Organizations seem to adopt Web services without thought of strategic fit and function. Adoption is only half the battle.

Access to services implies that business processes existing in and between companies can be coupled at the services layer, meaning that services are shareable (if allowed) among the partner organizations. Since those services are always visible, information bound to them is produced and consumed in real-time. In essence, you create a virtual set of applications that exists between trading partners that allow them to function like a single entity and, thus, service common business processes as if they existed in a single company.

How do you begin sharing your SOA? First, break the SOA down into several basic components before attempting integration. Those include private and public services, private and public processes, and data and abstract data.

Private and public services are created for use within your organization (private) and to share with your partner organizations (public). Understanding which services to make public or private requires some analysis.

Public services are redundant within your trading community, such as logistics, inventory or billing. By exposing those services to outside organizations, you allow them to share the service and avoid their own development costs. You also allow them to leverage a shared service as a point of integration and a binding point for common processes.

There are a few key criteria for selecting services that are public: The service should be redundant to two or more entities. The service should be unique to the trading community; otherwise it makes sense to look for other public services to solve the problem. And the service should offer ease of integration, including the ability to discover semantics as well as interfaces.

Private and public processes provide orchestration of services, binding them into a business process to drive information movement and invocation of

services. You may consider processes or orchestrations as a group of services gathered together to solve a particular business problem—an overriding control mechanism, if you will.

There are three types of processes to visualize enterprise and cross-enterprise processes: private, public and specialized.

Private processes exist at the intracompany level, letting the business user define common processes that span only systems that are within the enterprise and not visible to trading partners or to communitywide processes.

Public processes exist between companies, and they consist of a set of agreed-upon procedures for exchanging information and automating business processes within a community. This is the core notion of intercompany SOA, since it's really the concept where we create intercompany orchestrations.

Specialized processes are created for a special requirement, such as collaboration on a common product development effort that only exists between two companies and has a limited life span.

The notion of **data and data**

abstraction lets us think about collections of data or services as abstract entities, thus represented in a form that is most useful to the integration server or the application integration architect. This provides for the grouping of related pieces of information, independent of their physical location and structure, as well as defining and understanding what meaningful operations can be performed on the data or services.

We need to separate the implementation from the abstraction itself. This allows us to change the internal representation and implementation without modifying the abstract behavior and lets people use the abstraction for intercompany SOA without having to understand the internal implementation.

It's not a matter of when intercompany SOA will become a reality. The evolution is already under way. You either can get good at it now by creating a more competitive and responsive business or play catch-up later.

Understand your own value and work directly with your partners to ensure that everyone is adjusting their way of thinking. The goal is to build shareable services and processes that automate your business, as well as processes between businesses. ■

Reach analyst David S. Linthicum at david@linthicumgroup.com.

SOA Watch



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Tacking toward agility

If you put a newcomer on a sailboat, give him the tiller and the mainsheet, and tell him to sail upwind, he probably would sail backward. Sailors never tire of talking about making boats go faster and the million variables that contribute to speed. However, you don't need to know anything about rigging tension and sail shape to get moving. You just need to know some basic constraints and rules about positioning the boat and the sail relative to the wind.

Similarly, for all the columns we write about fine-tuning approaches to design and architecture, tool choice and process improvement, there are only a few crucial things to ensure you move forward in software development. Sure, there are teams that seem to do everything right: daily stand-up meetings held as people do 40 minutes of cardiovascular exercise, pair programming while sitting with perfect posture, flossing after every code check-in, and so on. Most of us, though, struggle with less-than-perfect teams, hoping that the things on which we are skimping aren't critical. These things define our culture and determine the type of programmers who are likely to end up working with us over the long term.

Professional development begins with source control. It's astonishing to me, but

I sometimes encounter teams that use FTP and e-mail to move development files around. This is simply unacceptable and will immediately "flip the bozo bit" in any kind of skeptic.

In recent years, the OSS Subversion software has become very common, but I've recently become skeptical that it's a good match for newcomers to version control. While I've never lost any data in Subversion, it seems to get into faulty states ("wedged") fairly often, especially when manipulating large numbers of files, which is done often when introducing a team to source control. While it's generally easy for an experienced user to fix a Subversion error state, to a newcomer it can be off-putting. There are many choices, but I would suggest SourceGear Vault, Perforce and Visual Studio Team System as alternatives.

VSTS also has integrated task tracking, and I've come to see software-based task tracking as another vital tool, at least for teams that are not wholly "extreme" (the full Extreme Programming regimen is communal to a point where software would simply get in the way). In a team with good tools, there is no such thing as a routine fea-

ture—"boilerplate" code is factored into frameworks, libraries and components.

Programmers should spend their time on challenging features. Those invariably have subtleties—areas where the programmer can be flexible and areas that demand they toe the line. This conclusion that fine-grained task management is almost universally required is one that I've reached over the years with great hesitance, because individual programmers can so often succeed in developing small utilities with a fraction of the guidance. Unfortunately, one of the most common mistakes in process improvement is letting up on fine-grained task management too soon.

Task tracking cannot be done with Excel, that favorite of casual managers. Not only must dependencies between tasks be tracked, but also—and most important—tasks must progress through a defined life cycle, even if one as simple as "open/in-progress/resolved/closed" ("open" and "closed" being states defined by managers and "in-progress" and "resolved" being states defined by the developer). I like VSTS' task track-

ing, which integrates with Outlook, but also commonly choose Atlassian's JIRA.

Realizing that I have space for only one more topic, I am tempted to write about modularization, an almost perfect gauge of productivity. But modularity can be difficult for managers to judge, so instead I'll speak of the relatively modern practice of continuous integration (CI).

CI can be summarized as "daily contributions that never break the build"—a system that avoids the common "two steps forward, one step back" chaos of teams that work on their features in isolation, only to find that integrating them is as much (or more) work as building them. I somewhat surprised myself by choosing CI over unit testing, but CI invariably leads to unit testing, since manually validating the build gets old quickly.

There are many CI servers, both commercial and open source. I tend to use CruiseControl and its derivations (CruiseControl.NET, CruiseControl.rb), but that's more out of familiarity than any objective evaluation of the alternatives.

Version control tells you who contributed what and when, task management should tell you the "why" of contributions, and CI confirms that you're not moving backward. You might not win races, but you'll be developing. ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

Windows & .NET Watch



Larry O'Brien

Parallel programming with CUDA

The acceptance of parallel programming is slowly growing among developers. This acceptance, or at least awareness, is being driven by the advent of multicore systems. As fellow columnist Larry O'Brien and I have discussed many times, the day is soon coming when most users will have four cores on their desktop and they will wonder why their apps are not running any faster. Then, client-side developers will start being held responsible for the fact that they still have not learned data and functional decomposition and begun designing apps in terms of threads. That's how things stand now: Parallel processing has to do with multicores unless you're a server kind of programmer, in which case it's multiple cores and multiple processors.

However, another segment of the computing world lives and breathes concurrency and parallel programming—scientists and researchers who perform simulations, massively parallel analyses and other tasks characterize various scientific niches. And, like them, there are also the Wall Street analysts who thrive on the automated search for trades that are easily repeatable and can make small profits quickly.

If you're like me, you tend to think of the scientists and analysts as having a different complement of hardware to

run their software. You think of them having sprawling clusters running specialized software that generates huge data sets, which are visualized with advanced modeling packages. That model, while certainly valid, is giving way to a new one that—surprise—uses standard PC hardware.

That approach gives the lion's share of computing to the graphics card. We might think that dual quad-core workstations with eight execution paths are something terrific (and I do think that), but to developers accustomed to programming graphics cards, eight paths is a distinctly inferior proposition. They're used to 32, 64, even 128 paths, all working at once. The number of simultaneous threads is actually much higher than 128 because graphics cards make it easy to have thousands of threads on the fly using different parts of the pipeline—all under the control of the hardware. In other words, a decent graphics card can deliver astounding parallel capability.

If you regularly read programming literature, you've surely seen the rare article here and there that discusses harnessing graphics processors for non-graphics use. But a quick perusal suggests that the

applications are so narrow and specialized that you would never consider them a viable option for your desktop apps.

However, a new program from Nvidia, called CUDA (Compute Unified Device Architecture), seeks to change that perception. Going to the Web site at www.nvidia.com/cuda, you will find a wealth of free tools to get you up to speed on how to exploit your graphics card—which needs to be any recent Nvidia card that's not at the entry-level end of the price spectrum. For professional reasons, I've recently been looking at CUDA and was surprised to see how this programming niche has come together.

In essence, you download a CUDA driver for your card. (I am using an Nvidia Quadro FX 370, a card that retails for well under US\$200.) Once it's installed, you download the SDK, which is primarily oriented to C programming. It first contains a compiler driver that separates out the CUDA-specific calls. It then hands the rest of the program to the regular C compiler to handle, while it converts CUDA code to binaries for the graphics card. (CUDA supports Windows via Visual Studio .NET; many flavors of Linux via gcc; and

just recently it added Mac OS X.)

When you run the resulting program, the calls are made to the CUDA code, which runs on threaded floating-point calculations on the Nvidia card. Nvidia also provides libraries for typical scientific computing needs: BLAS, FFT and the like, along with a plug-in for accelerating Matlab. The company's sample programs include more straightforward business applications, such as computing the Black-Scholes pricing for options, Monte Carlo simulations and more.

This form of computing is often referred to as general-purpose graphics processor unit (GPGPU) programming. It's an effective way of speeding up calculations, sometimes on the order of 100 times over standard CPU-only PCs. CUDA makes it easy to program by allowing access to GPGPU via straightforward C statements, rather than imposing familiarity with vertex shaders and other graphics hardware features that most developers don't know or care about. Note that the increase in performance because of CUDA does not flow entirely back to your application. The rest of your code is operating more slowly, so only the parts of the program that were previously calculations obtain a performance lift. Nonetheless, on many applications, that can be a substantial improvement. ■

Andrew Binstock is the principal analyst at Pacific Data Works. Read his blog at binstock.blogspot.com.

Integration Watch



Andrew Binstock

SHORT TAKES

WE ALL KNOW THAT AJAX stands for “Asynchronous JavaScript and XML.” But what does AJAX really mean? For many developers, it means “Rich Internet Experience Through a Browser,” but “RIETAB” is an awkward name. Let’s just stick with AJAX.

Sure, AJAX implies that JavaScript is used to invoke function calls, and those function calls use XML to deliver content using the XMLHttpRequest object. But it doesn’t have to be that way. As long as AJAX is implementing JSON—the JavaScript Object Notation—the actual use of XML is 100% optional.

In fact, one could argue—and I’ve heard people make this case—that AJAX doesn’t even have to use JavaScript. Any scripting language that can run within the browser can do the trick. How about Asynchronous VBScript and XML? I don’t see why you couldn’t have an AJAX-like rich Internet experience, running in the browser without JavaScript and without XML.

So, we’ve eliminated the XML from AJAX and potentially eliminated the JavaScript from it as well. I guess the only important element is that our RIA experience is asynchronous. Or, to look at it the way suggested earlier, the truth is that our real goal is to do RIETAB development, and everything else is unimportant. — Alan Zeichick

MOST END USERS wouldn’t know a development framework if it bit them in the face. But an awful lot of Photoshop users are finding out the hard way that frameworks matter.

That’s because Adobe Systems announced plans to release a native 64-bit version of Photoshop for Windows as part of Creative Suite 4, with the Mac

OS X 64-bit version on hold until the CS 5 release train.

The reason for that goes back to two development frameworks for Apple’s platform, Carbon and Cocoa. I’ve covered Mac OS X since Darwin was a gleam in an engineer’s eye, and I’ve never heard of a practical difference between the two until recently.

Apple decided last year to shelve its plans to make Carbon a 64-bit framework and focus its energy on Cocoa’s 64-bit implementation. But that move really put Adobe in a pickle, because its flagship image manipulator and core plug-ins amount to roughly a million lines of Carbon code, much of which has to be rewritten for Cocoa.

Even Adobe can’t pull off a miracle of that sort in the time frame for CS4, and Adobe’s John Nack, the product manager for Photoshop, seems to be hedging his bets on having it 64-bit-native for CS5. Enzo Torresi was right: You can create the universe in six days, but only if you’re starting from scratch.

— P.J. Connolly

PUTDOWNS AND ZINGERS flew back and forth April 3 in Silicon Valley as the heads of SAP and Salesforce debated their respective business models.

The Computer History Museum in Mountain View, Calif., managed to hold more than 500 attendees—as well as the egos of Salesforce CEO Marc Benioff and SAP chairman Hasso Plattner—with the two debating whether licensed software would rule

the software world, or if software-as-a-service would sweep all before it.

The boss of upstart Salesforce, at US\$749 million in annual sales, challenged heavyweight SAP, at \$16 billion, to do better with its license model than Salesforce’s delivering SaaS over the Internet. Benioff even offered to help SAP develop its applications on Salesforce’s platform.

“The world is changed. The Internet is the platform of the future,” Benioff declared.

No dice, answered Plattner. SaaS software “would have to be pretty generic” to appeal to as many customers as Salesforce plans to serve, he added. And enterprises prefer licensed software such as SAP’s to use as a base for customization.

“Let me give you some advice,” the silver-haired Plattner lectured Benioff, “but you might not take it because you are younger: Don’t overestimate your platform.” — Robert Mullins

AN ENTERPRISING DEVELOPER has found a way to break Google’s App Engine lock-in. Chris Anderson, the co-founder of the Grabb.it MP3 blog service, devised a way to run App Engine applications on Amazon’s EC2. Better still, he’s made his work into an open-source project. Good for him. Weren’t Web services supposed to be the answer to proprietary platforms? Anderson’s solution, called AppDrop, is a container for applications created using the App Engine SDK. Users develop applications as they normally would but deploy them to EC2 instead of Google’s infrastructure. Fight the power.

— David Worthington



BUSINESS BRIEFS

Google will sell off **DoubleClick’s** Performics search marketing business to avoid what the company called a conflict of interest for search results. In addition, 300 jobs were cut from DoubleClick’s staff, as Google eliminates redundancies from the acquisition of DoubleClick in March. The job loss represents about one-quarter of DoubleClick’s staff. . . . **Microsoft** has completed its acquisition of **Danger**, a maker of mobile devices. Danger created the Java-based operating environment used in the T-Mobile Sidekick. Microsoft executives said that Danger’s benefit is its real-time, mobile messaging and social networking applications. . . . **IBM** signed a definitive agreement to buy **FileX**, a privately held storage software company that focuses on continuous data protection and application-recovery software. IBM said the deal would enable the company to offer an end-to-end data-protection product for laptops, remote or branch offices, and disaster-recovery sites. . . . **EMC** plans to acquire data storage and protection specialist **Iomega** for US\$213 million, as EMC seeks to increase its market share in small-business markets with Iomega’s brand name and products. Iomega will become the core of EMC’s new Consumer/Small Business Products Division, according to EMC. The division will include EMC’s Retrospect

backup software and Lifeline digital content management product. . . . **CA** has filed a motion in its copyright infringement case against **Rocket Software** that claims the source code for the Rocket DB2 Log Analysis Tool and other products is “virtually identical” to code written by CA programmers. CA is seeking damages of at least US\$200 million, and the company said that Rocket obtained the source code for the products by hiring programmers and developers formerly employed by CA. . . . **Intel** has created the **Capital China Technology Fund**, its second China investment fund. The US\$500 million fund will be used for investments in wireless broadband, technology and media to help expand technology markets in China.

EARNINGS: **Compuware** said revenue rose for its fourth quarter, which ended March 31, to US\$337 million from \$313 million for the year-ago quarter. That total broke down as follows: software licenses, \$100 million; maintenance, \$126 million; and professional services, \$111 million. . . . **Ounce Labs** said its quarterly sales tripled from the previous quarter, giving the company nine consecutive quarters of growth. Ounce did not disclose earnings, however, because it is a privately owned company. ■

EVENTS CALENDAR

CommunityOne San Francisco SUN MICROSYSTEMS developers.sun.com/events/communityone	May 5
JavaOne San Francisco SUN MICROSYSTEMS java.sun.com/javaone/sf/index.jsp	May 6–9
VSLive Orlando Orlando, Fla. 1105 MEDIA www.vslive.com/2008/orlando	May 12–16
IDUG 2008 Dallas INTERNATIONAL DB2 USERS GROUP conferences.idug.org/na	May 18–22
BREW 2008 San Diego QUALCOMM brew.qualcomm.com/brew/brew_2008	May 28–30
RailsConf Portland, Ore. O'REILLY MEDIA en.oreilly.com/rails2008	May 29–June 1
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USENIX 2008 Boston USENIX www.usenix.org/events/usenix08	June 22–27
ESRI International User Conference San Diego ESRI www.esri.com/events/uc/index.html	August 4–8
Software Test & Performance Conference Boston BZ MEDIA www.stpcon.com	September 24–26
EclipseWorld 2008 Reston, Va. BZ MEDIA www.eclipseworld.net	October 28–30

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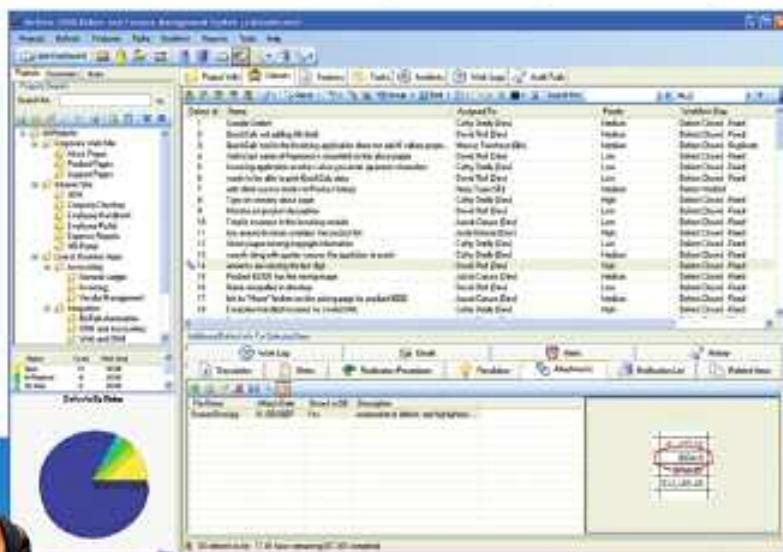
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